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FINAL

2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24

Former Naval Station Treasure Island
San Francisco, California

January 2015

Prepared for:

Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108

Prepared under:

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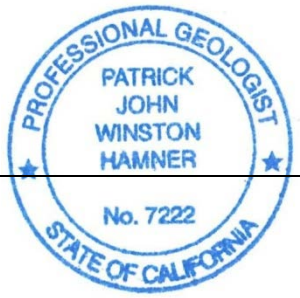
Review and Approval



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Appendix E: Responses to BCT Comments on Draft Report

µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
% v/v	percent by volume
ALS	ALS Global
AST	aboveground storage tank
BCT	Base Realignment and Closure Cleanup Team
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COC	chemical of concern
COPC	chemicals of potential concern
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly known as Superfund
cis-1,2-DCE	cis-1,2-dichloroethene
cu. yd.	cubic yard
ELCR	excess lifetime cancer risk
EMAX	EMAX Laboratories, Inc.
EWI	Environmental Work Instruction
ft/ft	feet per foot
IR	Installation Restoration
J	estimated value
LDC	Laboratory Data Consultants, Inc.
M-K	Mann-Kendall
mg/L	milligrams per liter
mL/min	milliliters per minute
NAVSTA TI	Naval Station Treasure Island
Navy	Department of the Navy
NIRIS	Naval Installation Restoration Information Solution
NTCRA	non-time-critical removal action
PAH	polycyclic aromatic hydrocarbons
PCE	tetrachloroethene

pCi/L	picocuries per liter
QA	quality assurance
QC	quality control
Ra-226	radium 226
ROD	record of decision
RPD	relative percent difference
RWQCB	Regional Water Quality Control Board
SAP	sampling and analysis plan
SOP	standard operating procedure
SSSL	site-specific screening level
SWDA	solid waste disposal area
TCE	trichloroethene
TDS	total dissolved solids
TI	Treasure Island
TOC	top of well casing
TPHd	total petroleum hydrocarbons as diesel
TPHg	total petroleum hydrocarbons as gasoline
TPHmo	total petroleum hydrocarbons as motor oil
trans-1,2-DCE	trans-1,2-dichloroethene
TSS	total suspended solids
U.S. EPA	U.S. Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compound

Section 1 Introduction

Trevet has prepared this 2013 Annual Groundwater and Soil Gas Monitoring Report on behalf of the United States Department of the Navy (Navy), Naval Facilities Engineering Command, Southwest in accordance with Contract Number N62473-13-D-4803, Contract Task Order 0004. This report summarizes the results of the groundwater and soil gas monitoring activities conducted between March 2013 and December 2013 at Installation Restoration (IR) Sites 6, 12, 21, and 24 located at the former Naval Station Treasure Island (NAVSTA TI) in San Francisco, California (Figures 1 and 2).

The base-wide groundwater monitoring program at NAVSTA TI was established in 1994 to collect and report groundwater monitoring data in support of ongoing environmental restoration efforts at multiple IR sites. IR Sites 6, 12, 21, and 24 are part of the base-wide groundwater monitoring program, which is being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) framework. Soil gas sampling at IR Site 21 is also conducted under the base-wide monitoring program.

1.1 Purpose

The purpose of this report is to document the results and findings of groundwater and soil gas monitoring activities performed at IR Sites 6, 12, 21, and 24 during the four calendar quarters of 2013. Collectively, groundwater and soil gas monitoring activities at these four IR sites will be referred to as base-wide monitoring. The base-wide monitoring program involves groundwater monitoring at all four IR sites and soil gas sampling only at IR Site 21. Base-wide monitoring is necessary to evaluate the effectiveness of removal actions at IR Sites 6 and 12 and treatability studies at IR Site 24. In accordance with the *Final Record of Decision (ROD)/Final Remedial Action Plan for Installation Restoration Site 21*, the Department of the Navy (DON) is required to conduct groundwater and soil gas monitoring at IR Site 21 (DON 2013a).

1.2 Scope of Work

The technical approach for the monitoring program was designed to collect samples to assess concentrations of chemicals of concern in groundwater at the four IR Sites (Trevet 2012a, 2012b, 2013) and soil gas at IR Site 21 (Trevet 2013). The monitoring scope of work in 2013 included the following:

- IR Site 6 – quarterly measuring of groundwater levels (gauging) of three wells and sampling of two wells
- IR Site 12 – semiannual gauging of 25 wells and sampling of seven wells
- IR Site 21 – semiannual gauging and sampling of three wells and sampling of five soil gas monitoring points

- IR Site 24 – semiannual gauging and sampling of 38 wells

Monitoring activities included: measuring groundwater levels; collecting representative groundwater and soil gas samples from selected wells; analyzing the samples for chemicals of concern; performing third-party data validation; and compiling, tabulating, analyzing, and presenting the results in an annual report. Monitoring activities were performed in accordance with the Final Work Plan for Groundwater and Soil Gas Monitoring at IR Sites 6, 12, 21, and 24 (Trevet 2013), which included sampling and analysis plans (SAPs) for groundwater and soil gas sampling. Table 1 presents a summary of the current monitoring program for IR Sites 6, 12, 21, and 24.

1.3 Report Organization

This groundwater status report is organized into the following sections:

- Section 1 – Introduction
- Section 2 – Background
- Section 3 – Physical and Environmental Setting
- Section 4 – Conceptual Site Model
- Section 5 – Groundwater and Soil Gas Monitoring Field Activities
- Section 6 – Data Quality and Validation
- Section 7 – Groundwater and Soil Gas Monitoring Results
- Section 8 – Conclusions and Recommendations
- Section 9 – References
- Appendix A: Gauging and Sampling Logs
- Appendix B: Wastewater Discharge Permit
- Appendix C: Laboratory Analytical and Data Validation Reports
- Appendix D: Mann-Kendall Statistical Trend Analysis
- Appendix E: Responses to BCT Comments on Draft Report

Section 2 Background

This section provides background information including the location, history, and previous investigations related to IR Sites 6, 12, 21, and 24.

2.1 Facility Location and Background

Former NAVSTA TI is located on a man-made island in San Francisco Bay, midway between San Francisco and Oakland (Figure 1) and is within the City and County of San Francisco. The naval station consists of two adjacent islands connected by a causeway. The northern island, Treasure Island (TI), encompasses about 403 acres, and the southern island, Yerba Buena Island, encompasses about 147 acres (Figure 2). TI was constructed on the Yerba Buena Shoals north and northwest of Yerba Buena Island under the direction of the U.S. Army Corps of Engineers between 1936 and 1937. It consists primarily of sediments dredged from San Francisco Bay that were placed within a retaining wall of rock and sand dikes. TI was originally constructed for use as an airport for the City of San Francisco. It was also the site of the 1939 Golden Gate International Exposition. Navy operations at NAVSTA TI began in 1941, primarily for training, administration, housing, and other support services to the U.S. Pacific Fleet. In 1993, the Defense Base Realignment and Closure Commission recommended closure of NAVSTA TI. The facility was closed on September 30, 1997.

2.2 IR Site 6

IR Site 6 is located in the northeastern portion of TI (Figures 2 and 3) and is within the boundaries of the former Fire Training School used from 1944 to 1992. The site occupies approximately 4.5 acres. The site is bounded by Avenue M to the east and north, 14th Street to the south, and Avenue I to the west. The majority of Site 6 is paved except for the southern portion, which is unpaved.

The former Fire Training School once included 11 buildings, numerous smaller structures, and a training yard that consisted of “burn areas” lined with asphalt and concrete. During training exercises, fires fueled with diesel, gasoline, magnesium, and wood were set in various mock-ups and were extinguished with a mixture of water, biodegradable emulsifiers, and industrial talc. Six underground storage tanks (USTs) and one aboveground storage tank (AST) were present but have since been removed. Another suspected AST was either removed or may never have existed. Contamination of groundwater is believed to have resulted primarily from leaks from the USTs, ASTs, oil-water separator components, and associated piping; insufficient containment of unburned fuels and wastewater during fire training exercises; and surface spills from mishandling of chemicals (ERRG 2012).

IR Site 6 was originally included as part of the Navy's Petroleum Program, which addressed petroleum hydrocarbons in soil and groundwater. Petroleum remedial activities, including remedial excavation of soil near former USTs, pipelines, and oil-water separator components and free-phase petroleum recovery, were conducted in 2002 and 2003. Remedial activities included removing a total of approximately 5,700 cubic yards (cu. yd.) of impacted soil and transporting off site for proper disposal (Shaw 2004). Following the discovery of dioxins and furans in soil above screening levels, the site was transferred to the CERCLA Program.

Following completion of a Remedial Investigation/Feasibility Study (ERRG 2012), the Navy implemented a removal action to address petroleum-impacted soil in 2012 and 2013. During the removal action, approximately 800 cu. yd. of impacted soil was removed, monitoring well 06-MW01 was destroyed, and monitoring wells 06-MW25 and 06-MW26 were installed. Groundwater monitoring, focusing on petroleum hydrocarbons, will continue while a Proposed Plan/ROD is being prepared. The purpose of the current monitoring plan is to support the closure of the UST 240 petroleum site. Other chemicals of potential concern (COPCs) in groundwater that are associated with the Site, such as arsenic, will be addressed with the CERCLA Remedial Action.

The current quarterly groundwater monitoring program was designed to provide baseline data from new monitoring wells 06-MW25 and 06-MW26. Following completion of the first year of quarterly monitoring, the sampling frequency will be re-evaluated (Trevet 2013).

2.3 IR Site 12

IR Site 12, a CERCLA site, is located on the northwestern portion of TI and occupies about 94 acres (Figures 2 and 4). It is predominantly a residential housing area, consisting of multiunit residences with fenced back yards, open grassy areas between buildings, and paved roads and parking areas.

The Site was historically used for a variety of activities, including vehicle parking during the 1939 Golden Gate International Exposition, ammunition storage bunkers, an aircraft runway, materials storage, and solid waste disposal. The Navy constructed two-story residential buildings on slab foundations with four to eight units each at the Site over four phases of construction from 1967 to 1989 (Sullivan 2004).

The Site includes five areas for the purpose of groundwater monitoring. The areas include three solid waste disposal areas (SWDAs) Westside (formerly known as SWDA A&B), Bayside (formerly known as SWDA 1207/1209), and North Point (formerly known as SWDA 1231/1233), as well as the Mariner Drive and 175 Gateview Avenue petroleum areas. The following sections present further background details for these areas.

The current semiannual and annual groundwater monitoring program was designed to monitor the fate and transport of COPCs to support the IR Site 12 Remedial Investigation/Feasibility Study. The monitoring program was designed to provide continuing data for wells with reported COPCs above toxicity risk screening values and nearby wells to delineate the extent of groundwater impacts (Trevet 2013).

2.3.1 SWDAs Westside, Bayside, and North Point

SWDAs Westside, Bayside, and North Point are within Site 12 (Figure 4) and were identified from historical aerial photographs and site investigations (TriEco-Tt 2012a). An incinerator and incidental burn pits may have been used in the SWDAs. Debris was encountered within the disposal areas in both trench-type disposal units and as scattered debris mixed with the shallow soil. The debris typically consisted of materials such as loose rubbish, wood, glass, wire, rope, paper, and petroleum products, some of which may have been burned during the disposal process (Sullivan 2004).

Some of the debris, which was originally disposed of in the trench-type disposal units, was moved during grading for construction of the residential building foundations from 1967 to 1989. In 1999, two removal actions were completed in the housing area to remediate elevated concentrations of lead in debris and soil. The first removal action was conducted within SWDA Bayside between June and August of 1999. The second removal action was conducted in SWDA Westside, near Building 1133, in November 1999 (Sullivan 2004). Soil was removed to a depth of 4 feet but in some debris areas the depth was extended to as much as 8 to 10 feet. Phase III removal activities are scheduled for 2014 and 2015.

In 2007, a Final Action Memorandum/Interim Remedial Action Plan (SulTech 2007a) was approved for the removal of debris and contaminated soil from four areas of IR Site 12 (SWDAs Westside, Bayside, North Point, and Bigelow Court). The targeted COPCs for these areas included dioxins, polychlorinated biphenyls, polycyclic aromatic hydrocarbons (PAHs), and lead. Removal activities have been completed to a depth of approximately 4 feet below ground surface at SWDAs Bayside and North Point to remediate chemical/radiological impacts and to remove debris observed during the action. The removal action, which also included removal of low-level radiological contamination (radium 226 [Ra-226]), continued during 2013 and 2014 at SWDA Westside.

The chemical that poses the primary health concern in the debris is lead. However, concentrations of additional COPCs in the debris, including other metals, PAHs, polychlorinated biphenyls, and total petroleum hydrocarbons (TPH), have exceeded screening criteria.

Low-level Ra-226-impacted soil and small, radium-containing objects (0.5-inch-diameter foil disks, deck markers, and glass beads) were encountered at SWDAs Westside, Bayside, and

North Point during the removal actions. The highest concentrations of impacted soils and small, radium-containing objects (foil disks) were observed only in SWDA Westside, primarily on the south side of Westside Drive in the area between monitoring wells 12-MW08 and 12-MW29. The base of the SWDA debris is currently below the water table within many of the trench-type disposal features, possibly because the soil and debris may have settled. Historical groundwater sample results from the SWDA indicate that the primary COPCs are metals and TPH (SulTech 2005). Ra-226 has been added to the groundwater sampling plan based on the ongoing investigations at SWDAs Westside, Bayside, and North Point.

2.3.2 Mariner Drive and 175 Gateview Avenue Petroleum Areas

The 175 Gateview Avenue Petroleum Area and Mariner Drive Petroleum Area (Figure 4) were identified based on previous results for soil and groundwater samples collected at IR Site 12. The 175 Gateview Avenue Petroleum Area is located along the shoreline in the southern portion of IR Site 12 and a former UST is the most likely source of TPH contamination there. An "abandoned, buried oil tank" was referenced in this area in a 1971 geotechnical engineering report for construction of housing units on the site (TriEco-Tt 2012a). The engineering report indicated that the former UST was to be removed as part of site grading. An automobile service station was located directly east of 175 Gateview Avenue (formerly known as Building 1311) during the 1938-1939 Golden Gate International Exposition. Fuel tanks associated with the service station were removed around 1944 (Navy 1944). The abandoned oil tank described above and the former service station may be the sources of TPH contamination for the 175 Gateview Avenue Petroleum Area. Diesel is the predominant fuel reported in groundwater. A Time-Critical Removal Action is planned for the Gateview arsenic/TPH area.

The Mariner Drive Petroleum Area is located approximately 600 feet inland from the northern shore of TI and was identified based on detections of TPH in soil samples and initial results from groundwater monitoring. However, subsequent groundwater monitoring did not report elevated levels of TPH in groundwater samples (PTES 2008). A removal action was conducted near Buildings 1246 and 1248 in 2001, north of the Mariner Drive Petroleum Area (Figure 4), to remove PAHs in the shallow soil (Sullivan 2004).

2.4 IR Site 21

IR Site 21 is the site of the former vessel waste-oil recovery area. The site is located along the southeastern edge of TI, adjacent to Clipper Cove, and occupies approximately 2.0 acres (Figures 2 and 5). Buildings 3 and 111 cover the northwestern portion of the site and are intermittently leased for commercial uses. The northeastern portion of the site is an open parking area. The southwestern portion of the site is fenced and is currently occupied by the Treasure Island Sailing Center, which operates out of a prefabricated trailer.

The vessel waste-oil recovery area operated between 1946 and 1995. Waste oil from ships was transferred to an onshore oil-water separation facility near Building 3. The separation facility consisted of five aboveground storage tanks, each with a capacity of approximately 2,000 gallons. The approximate location of the tanks is shown on Figure 5. These tanks were removed in 1995. Analytical data from the sampling of monitoring wells at the Site demonstrated no pattern of elevated levels of TPH in groundwater.

Building 3, near the waste-oil recovery area, was used for various activities, including aircraft maintenance. A dip tank to clean aircraft parts was reportedly located at the southeastern corner of Building 3 (Figure 5). Although no records are available that describe the types and quantities of chemicals used or disposed of during parts cleaning operations, use of the solvents tetrachloroethene (PCE) and trichloroethene (TCE) as degreasing agents for cleaning metal parts was widespread at the time of Navy operations. Contamination of groundwater at the Site is believed to be from small spills of PCE and TCE in the dip tank area during former parts-cleaning operations.

A plume of dissolved PCE and daughter products between Building 3 and the shoreline of TI has been documented. Two treatability studies were conducted in 2005 and 2010 to evaluate the effectiveness of enhanced anaerobic in situ bioremediation treatment of groundwater. Soil gas sampling was conducted in 2011 and 2012 to evaluate the vapor intrusion pathway as part of a human health risk assessment. Results indicated that the potential human health risk from chlorinated volatile organic compounds (VOCs) in soil gas at the Site is within the risk management range (incremental cancer risk ranging from 10^{-4} to 10^{-6}) for nonresidential receptors but is greater than 10^{-4} for residential receptors, which is outside the risk management range.

A ROD was finalized for IR Site 21 in 2013 (DON 2013a). Remedial action objectives for the Site were established and include the following:

- Prevent exposure of future commercial/industrial workers through inhalation of VOCs in groundwater that migrate through the subsurface to indoor air (vapor intrusion) from groundwater that contains VOCs at concentrations above remedial goals.
- Prevent exposure of future construction workers through dermal contact with and inhalation of VOCs in groundwater that contains VOCs at concentrations above remedial goals in a construction trench.

Institutional controls with groundwater and soil gas monitoring were selected as the preferred remedial alternative for addressing hazards posed by residual VOC impacts at the Site. The Final ROD requires groundwater and soil gas monitoring until the 5-year review, which is scheduled to be completed in 2014. The purpose of the monitoring program is to “determine if

the vapor intrusion pathway risk remains stable and within or below the risk management range for nonresidential users" (DON 2013a). The need to continue groundwater and soil gas monitoring will be evaluated in the 5-year review. Institutional controls have been implemented to limit the potential exposure of future property users to VOCs that remain at IR Site 21. The institutional controls will remain in place until the concentrations of hazardous substances in groundwater and soil gas are at such levels as to allow for unrestricted use and exposure (DON 2013b).

The current semiannual groundwater and soil gas monitoring program was designed to confirm that the human health risk from the vapor intrusion pathway remains in the acceptable range in accordance with the Final ROD. The groundwater monitoring program was designed to provide data from the core of the dissolved chlorinated ethene plume, which are most relevant regarding potential commercial/industrial exposure. Similarly, the five soil gas probes selected for monitoring were selected as the most relevant to determine if the vapor intrusion pathway risk remains stable and within or below the risk management range for nonresidential users (DON 2013a).

2.5 IR Site 24

IR Site 24 is located on the eastern side of TI, extending from near the center of the island to San Francisco Bay (Figures 2 and 6). The site occupies approximately 20 acres. Building 99, a focal point of the remediation efforts, is located along 6th Street between Avenue H and Avenue I.

Building 99 was originally used as a laundry facility between 1942 and 1977, later as a meat processing and storage area, and most recently as office and workshop space (SulTech 2008). The laundry facility included dry-cleaning operations but the location of these operations within Building 99 is not well known. Waste solvents used in the dry-cleaning process, likely containing PCE, were discharged to soil and groundwater at Building 99 from leaks or spills. The volume of solvents released is unknown. Historical data indicate dissolved chlorinated solvents have been reported in the groundwater near Building 99 and extending toward the bay to the east and northeast. Other large structures are present at the Site, including Buildings 69, 96, 230, 260, 342, 343, and 455. The buildings at the Site are generally unoccupied but some are used for storage.

The Navy conducted an investigation from April through July 2003 to delineate the horizontal and vertical extent of a plume of VOCs in groundwater that originated near Building 99 within IR Site 24 (TriEco-Tt 2012b). A treatability study was conducted in the source area under Building 99 in 2004 to evaluate anaerobic in situ bioremediation as a potential remedial option to treat high VOC concentrations at the site.

The treatability study was expanded in late 2004 and early 2005 to evaluate the effectiveness of the in situ bioremediation treatment to address low VOC concentrations in the more mobile portions of the plume. The expanded treatability study reduced VOC concentrations to below the treatability study cleanup goal of 100 micrograms per liter (µg/L) total VOCs in most areas of the plume.

The treatability study was expanded again in 2008 to investigate the potential presence of dense nonaqueous phase liquids near Building 99 and to test reversal of the injection and extraction pump system to optimize treatment. A third phase of the treatability study was performed in 2011 and 2012 to enhance degradation of chlorinated ethenes in groundwater areas of low and medium concentrations. The site is currently in transition from the feasibility study phase to the Proposed Plan/ROD phase of the CERCLA cleanup process. Risk-based project remedial goals for chemicals of concern in groundwater were developed in the Focused Feasibility Study (SulTech 2008) based on future commercial/construction worker exposure scenarios.

A Focused Feasibility Study Addendum is currently under review by the Base Realignment and Closure Cleanup Team (BCT). The purpose of the Addendum is to evaluate alternatives that will accommodate residential use of the property. The remedial goals will be redefined in the Addendum and will be incorporated into future groundwater monitoring reports.

The current semiannual groundwater monitoring program was designed to monitor the effectiveness of treatability studies and to provide long term monitoring data to support preparation of a ROD and Remedial Design. The groundwater monitoring program provides data from monitoring wells that met at least one of the following optimization criteria (Trevet 2013):

- Chemical of concern (COC) concentration exceeded the project remediation goal within previous 3 years
- COC concentration exceeded the alternate project remediation goal within previous 3 years and well is within 100 feet of proposed residential land use
- COC concentration exhibited increasing or rebounding trend
- Supplemental data are needed to delineate a dissolved COC plume

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Section 3 Physical and Environmental Setting

The section provides a description of the physical setting of NAVSTA TI and IR Sites 6, 12, 21, and 24.

3.1 Physical Setting

TI is a man-made island constructed in San Francisco Bay between Oakland and San Francisco, California. The island is surrounded on all sides by San Francisco Bay and is connected to Yerba Buena Island to the south by a narrow causeway. TI is topographically flat, ranging between 12 to 15 feet above the mean lower low water level.

3.2 Geology of Treasure Island

TI was constructed from primarily sandy sediments dredged from San Francisco Bay and placed within a retaining wall of rock and sand dikes. Dredging and construction of the island, as directed by the U.S. Army Corps of Engineers, began in 1936 and was completed in 1937. The island was constructed on the Yerba Buena Shoals, a spit of sand that extended north and northwest of naturally occurring Yerba Buena Island.

Subsurface materials at NAVSTA TI can be divided into the following four geologic units, listed from youngest (shallowest) to oldest (deepest):

- Fill and Shoal Sands (dredged sand fill and Yerba Buena Shoal sands)
- Younger Bay Mud
- Older Bay Mud
- Franciscan Assemblage

3.2.1 Fill and Shoal Sands

Dredged sediments used for construction of TI consisted primarily of fine- to coarse-grained sand with lesser amounts of silt, clay, and gravel. The dredged sand included some shell fragments and clay nodules. The clay nodules were derived from clay beds within the sediment, excavated by dredging, and rounded as they passed through the delivery pipeline. Thin beds of clay occasionally developed as finer materials in the dredged sand fill settled out during fill operations.

Of the more than 29 million cu. yd. of material dredged from a variety of locations in San Francisco Bay, approximately 21 million cu. yd. were retained behind the sea wall of TI. The remainder of the dredged material was lost during construction as a result of erosion by tidal currents and flotation of fine-grained material. The fill material was obtained from the following sediment sources in San Francisco Bay (Lee 1969).

- Heavy sand: Coarse-grained and well-graded sand and gravel from the Presidio, Alcatraz, and Knox Shoals; transported by hopper dredges (approximately 1,261,000 cu. yd.).
- Soft blue marine sand: Very fine- to fine-grained sand obtained from the channel south of TI; transported by pipeline from dredges (approximately 6,349,000 cu. yd.).
- Soft blue marine sand: Fine-grained sand obtained from east and north of TI; transported by pipeline from dredges (approximately 14,356,000 cu. yd.).
- Yellow alluvial sand: Cohesive, well-graded, fine- to medium-grained sand, 98 percent held by 150-mesh sieve, obtained from the eastern portion of the bay and transported by pipeline from dredges (approximately 7,142,000 cu. yd.), which contained lenses of clayey sand discharged as clay nodules.
- Miscellaneous material: Principally black sandy mud brought up by clamshell dredge over the sea wall of TI (approximately 252,000 cu. yd.). The underlying shoal sands consist of sand deposits similar in lithology to the overlying dredged sand sediments of TI, but they are generally stiffer in consistency and their density is higher compared with the artificial fill above them. The dredged sand fill and the underlying shoal sands range in combined thickness from approximately 30 to 50 feet (Geomatrix 1990).

3.2.2 Younger Bay Mud

Underlying the Yerba Buena Shoal and fill sands are Younger Bay Mud sediments of marine origin that consist of soft to stiff, olive-gray silty clay and clay with interbedded sand and silt layers in some areas. Younger Bay Mud sediments range from approximately 10 to 120 feet thick. These sediments are thinnest on the eastern portion of the island and thicken toward the northwestern portion of the island (Geomatrix 1990).

3.2.3 Older Bay Mud

Underlying the Younger Bay Mud sediments are the Older Bay Mud sediments, which consist of stiff to very stiff, sandy, silty, and peaty clays that extend to the Franciscan Assemblage bedrock. The Older Bay Mud sediments, approximately 20 to 170 feet thick, are thinnest on the southern portion of the island and thicken toward the northern portion of the island (Geomatrix 1990).

3.2.4 Franciscan Assemblage

Underlying the Older Bay Mud sediments is bedrock of the Franciscan Assemblage, which consists of interbedded shales and sandstone. Observations from borings that penetrated bedrock on the northwestern portion of TI report the estimated depth to the Franciscan Assemblage

ranges from 150 to 320 feet below ground surface (bgs). Depths are shallowest on the southern portion of the island and deepest toward the northern portion of the island (Geomatrix 1990).

3.3 Hydrogeology of Treasure Island

Groundwater at TI is unconfined, with an average depth to water of approximately 5.6 feet bgs at IR Site 6, 3.8 feet bgs at IR Site 12, 6.7 feet bgs at IR Site 21, and 6.9 feet bgs at IR Site 24. Groundwater recharge occurs primarily from infiltration of precipitation, with some contribution from landscape irrigation.

In general, site-specific estimates of hydraulic conductivity for the dredged fill and sedimentary deposits that make up TI are consistent with values for the same materials in published literature (Todd 1980). In situ hydraulic conductivity was evaluated using rising-head slug tests in wells throughout TI (PRC 1996). Hydraulic conductivity values from these tests ranged from 5.0 feet per day at well 4/19-MW01 to 15.6 feet per day at well 12-MW01, with an arithmetic mean of 10.3 feet per day. Detailed descriptions of field methods for slug testing and hydraulic conductivity calculations are presented in the slug testing summary report (PRC 1996).

3.3.1 Tidal Influence and Tidal Mixing

Fluctuations in the groundwater table between high and low tides ranged from 1.81 feet (at 30 feet from the bay shoreline) to 0.12 feet (at 250 feet from the bay shoreline). The tidal fluctuation in the bay was measured at 5.37 feet during the corresponding period based on data from a tidal study in August 1995 (PRC 1995). Within 200 to 250 feet of the bay shoreline, tides induce a steepening of the groundwater gradient as a result of low tide and a decline of and reversal in the groundwater gradient as a result of high tide. Average lag times for peak fluctuations in the water table were 1 hour after high tide and 3.5 hours after low tide.

Based on the results of a tidal mixing zone study in 2001, it was estimated that physical mixing of surface water and groundwater takes place over distances that ranged from 60 to 150 feet inland from the NAVSTA TI mean lower low water shoreline. Estimates of the degree of tidal mixing of surface water and groundwater for NAVSTA TI ranged from 10 to 17 percent within wells positioned about 50 feet from the bay shoreline, except at a transect in the southeastern portion of NAVSTA TI. Tidal mixing was conservatively estimated at 43 percent within this southeastern portion of NAVSTA TI. However, conditions encountered in this transect are considered unusual and representative only of the area immediately surrounding this transect (Tetra Tech 2002).

3.3.2 Groundwater Flow

The dynamic equilibrium among hydrologic processes on NAVSTA TI (for example, infiltration, evapotranspiration, and groundwater flow) causes mounding of groundwater in the center of the

island. Groundwater at TI generally flows radially from the center of the mound toward the shoreline (Tetra Tech 2003). Small-scale features such as localized irrigation and leaking storm sewer lines that create minor mounds and depressions also are present in the water table.

The height of the groundwater mound at the center of TI increases during the wet season (November through May) and diminishes during the dry season (June through October). Therefore, the overall hydraulic gradient between the center of the island and the shoreline is greater during the wet season than the dry season. In addition to seasonal fluctuations in hydraulic gradient, tidal fluctuations also influence the hydraulic gradient at locations up to 200 feet from the shoreline.

3.3.3 Groundwater Quality and Beneficial Uses

Potential beneficial uses of groundwater in the San Francisco Bay Region are outlined in the California Regional Water Quality Control Board, San Francisco Region (RWQCB) Water Quality Control Plan (RWQCB 1995). RWQCB staff have concluded that the quality and the hydrogeologic conditions of groundwater at NAVSTA TI are such that it is not a potential source of drinking water pursuant to State Water Resources Control Board Resolution 88-63 and RWQCB Resolution No. 89-39 (RWQCB 1996, 2001). With regard to the investigations under the NAVSTA TI groundwater monitoring program, the principal beneficial uses of interest are groundwater replenishment of surface water bodies (San Francisco Bay) and the related protection and use of estuarine habitats.

Section 4 Conceptual Site Model

This conceptual site model summarizes the current understanding of site conditions, contaminant sources, release mechanisms, affected media, and existing and future land use scenarios.

4.1 Contaminant Sources and Release Mechanisms

The following presents the general source and release mechanism for constituents being evaluated as part of the base-wide groundwater monitoring program.

- **IR Site 6.** Petroleum hydrocarbons were stored on site in tanks. A release or releases to soil and groundwater resulted primarily from petroleum spills or leaks from USTs, ASTs, and associated piping and structures. Sources of non-petroleum COPCs at IR Site 6 included firefighting training activities, fuel products burning, firefighting wastewater, transformers, and surface spills (ERRG 2012).
- **IR Site 12 SWDAs.** Solid waste was historically disposed of in trenches on site. The solid waste consisted of trash and petroleum products, some of which was burned. Groundwater impacts may be the result of past disposal practices at the site. COPCs in groundwater include metals, petroleum hydrocarbons, and potentially Ra-226.
- **IR Site 12 Petroleum Areas.** Petroleum hydrocarbons were stored in USTs at the 175 Gateview Avenue Petroleum Area. A release or releases to soil and groundwater resulted primarily from petroleum spills or leaks from the USTs. The Mariner Drive Petroleum Area was identified based on detections of TPH in soil and groundwater; the source and release mechanism(s) are not known.
- **IR Site 21.** A dip tank, used for cleaning aircraft parts, operated near the southeastern corner of Building 3. Chlorinated solvents such as PCE and TCE may have been used in the tank. A release of chlorinated solvents to soil and groundwater occurred as a result of small spills of PCE and TCE in the dip tank area.
- **IR Site 24.** A dry-cleaning facility operated at Building 99. PCE was likely used at the facility. Waste solvents containing PCE were discharged to soil and groundwater from leaks or spills.

4.2 Affected Media

Affected media at the four IR sites include soil and groundwater. At sites which involve volatile constituents (solvents or petroleum hydrocarbons), soil gas is a likely affected medium. Soil gas is a confirmed affected medium at IR Site 21. The base-wide monitoring program targets impacts to groundwater and soil gas.

4.3 Receptors

For site-related contaminants to pose a potential risk to receptors, there must be a complete exposure pathway from the affected media to the receptor. Potential receptors are those that may contact (i.e., be exposed to) site-related contaminants in environmental media. Humans are potential receptors for the four IR sites, particularly for potential soil gas exposure. Ecological resources are also potential receptors at IR Site 12 including plants, invertebrates, birds, and mammals (SulTech 2007b).

Habitat surveys conducted at IR Sites 6, 12, 21, and 24 indicated an overall poor-quality ecological habitat at NAVSTA TI (SulTech 2007b). Marine ecological receptors may be considered receptors to the extent that impacted groundwater from the sites might have discharged to San Francisco Bay.

4.4 Potential Exposure Pathways

Potential exposure pathways for humans at the sites include:

- Incidental ingestion of soil and groundwater during construction activities
- Dermal contact with soil and groundwater during construction activities
- Indoor air inhalation of soil gas by residents or workers
- Inhalation of soil gas by construction workers during trenching activities

Potential exposure pathways for ecological receptors at the sites include:

- Ingestion of surface water

4.5 Current and Future Land Use

Current land use at TI is generally urban. The following outlines current land use at the individual IR sites:

- IR Site 6 – vacant land that is mostly paved
- IR Site 12 – residential use land with roadways and vegetated lawns; most residences are occupied but some areas, such as SWDAs Bayside, North Point, and the majority of SWDA Westside, are unoccupied
- IR Site 21 – commercial use land occupied by leased commercial space at Building 3 and the Treasure Island Sailing Center; outside of buildings, the ground is paved
- IR Site 24 – commercial and recreational use land; buildings are mostly unoccupied or used for storage with little human occupation; an active baseball field and tennis courts are located in the eastern portion; the ground is partially paved

Much of TI is slated for redevelopment. In accordance with the April 2011 Treasure Island/ Yerba Buena Island Redevelopment Project Conceptual Land Use Plan (Treasure Island Development Authority 2011), the planned land use is briefly described below and illustrated on Figure 7.

- IR Site 6 – open space and public services land use
- IR Site 12 – open space and residential land use
- IR Site 21 – open space and mixed land use
- IR Site 24 – open space and adjacent residential land use

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Section 5 Groundwater and Soil Gas Monitoring Field Activities

This section summarizes the field methodology for groundwater level gauging, sample collection, equipment decontamination, investigation-derived waste management, and the analytical methods used for the groundwater and soil gas monitoring events. The field activities during the March, June, and September 2013 events at IR Site 6 and June 2013 event at IR Site12 were conducted under the approved SAP for IR Sites 6 and 12 (Trevet 2012a). Field activities during the March 2013 event at IR Sites 21 and 24 were conducted under the approved SAP for IR Sites 21 and 24 (Trevet 2012b). Field activities during the December event at IR Sites 6, 21, and 24 were conducted in accordance with the most recent approved base-wide SAP (Trevet 2013).

5.1 Monitoring Well Inspections

Trevet personnel performed inspections of the monitoring well surface completions during each of the four monitoring events in 2013. The inspections were done concurrent with gauging and sampling activities and included noting security, safety, and maintenance needs; documenting conditions; and photographing each wellhead. Table 2 presents a summary of the condition and maintenance needs and a photograph of the wells in the groundwater monitoring program.

5.2 Groundwater Level Measurement

Trevet personnel measured (gauged) the depth to groundwater in monitoring wells included in the monitoring program during the March, June, September, and December 2013 events. Groundwater levels were collected before purging activities were initiated. Groundwater levels were measured with an electronic water-level indicator from the surveyed reference point marked on the top of the well casing (TOC) following the standard operating procedure (SOP) described in the approved SAP (Trevet 2013). Wells gauged during each event are shown in Tables 3 through 6 at the end of this report. Well gauging logs are included in Appendix A.

Groundwater levels at Sites 6, 12, 21, and 24 were measured in coordination with the local low tide. Wells within approximately 250 feet of the shore, which were expected to be the most sensitive to tidal fluctuations, were gauged within approximately 1 hour of the low tide. Wells more distant from the shore were generally gauged within 4 hours of the low tide. For each of the four gauging events, all groundwater level measurements were collected on the same day at each site.

5.3 Groundwater Sampling

Trevet personnel performed groundwater sampling activities four times during the 2013 monitoring period. The following table summarizes each event. Wells sampled during each

event are shown in Tables 7 through 15 at the end of this report. At IR Site 6, the two wells included in the program were sampled on a quarterly basis. Wells at IR Sites 12, 21, and 24 were sampled on a roughly semiannual basis. The semiannual schedules for these three sites, which differed under the previous 2012 SAPs for IR Sites 6 and 12 (Trevet 2012a) and IR Sites 21 and 24 (Trevet 2012b), were coordinated during 2013 and are expected to occur together during the first and third calendar quarters in the future. To synchronize the monitoring schedules, the second event at IR Site 12, normally performed in December 2013, was completed in March 2014, which is concurrent with monitoring at IR Sites 6, 21, and 24.

Table 5-1. Groundwater Monitoring Event Summary

Site	Gauging Date	Sampling Dates	Number of Wells Sampled
IR Site 6	03/13/13	03/13/13 and 04/16/13	2*
	06/24/13	06/24/13	2*
	9/16/13	09/16/13	2*
	12/09/13	12/10/13	2
IR Site 12	06/24/13	06/24/13 to 06/26/13	7*
IR Site 21	03/04/13	03/04/13 to 03/06/13	37**
	12/09/13	12/10/13	3
IR Site 24	03/05/13	03/05/13 to 03/12/13	63**
	12/10/13	12/11/13 to 12/12/13	38

* indicates that this event was performed under the previous IR Sites 6 and 12 SAP (Trevet 2012a)

** indicates that this event was performed under the previous IR Site 21 and 24 SAP (Trevet 2012b)

Groundwater samples were collected in accordance with U.S. Environmental Protection Agency (U.S. EPA) low-flow sampling methods (USEPA 1996) and the sampling SOP presented in the approved SAP (Trevet 2013). Purging and sampling was performed using bladder pumps and dedicated or disposable polyethylene tubing. Wells at IR Sites 6 and 12 were sampled with dedicated bladder pumps. Mostly non-dedicated pumps were used at IR Sites 21 and 24, except for the few wells with dedicated bladder pumps at those sites. Wells at IR Site 24 that could not be accessed with bladder pumps because the casing was smaller than 1 inch in diameter were purged and sampled using a peristaltic pump and dedicated or disposable polyethylene tubing.

Groundwater parameter stabilization measurements were collected from an in-line flow-through cell using a YSI 556 water quality meter prior to sampling using standardized, low-flow, field-measurement protocols. All field equipment and instrumentation was calibrated in accordance with the manufacturer's specification or applicable test protocol on a daily basis.

Field parameters were continuously measured and recorded at approximately 3 to 5 minute intervals during low-flow purging. Purging of a well was considered complete when field parameters (temperature, electrical conductivity, dissolved oxygen, pH, oxidation-reduction potential, and turbidity) had stabilized in accordance with the SAP. Field parameters were

considered stable when three successive readings of electrical conductivity measured within ±3 percent, pH within ±0.1 unit, dissolved oxygen within ±10 percent, oxidation-reduction potential within ±10 millivolts, and turbidity within ±10 percent or less than 10 nephelometric turbidity units.

Depth to groundwater measurements were recorded during purging to ensure that drawdown was less than 0.3 feet. However, for small diameter wells, gauging could not be performed during purging due to limited space inside the well casing. Field measurement data collected during groundwater sampling is included on the groundwater sampling logs presented in Appendix A.

After purging was complete, the in-line flow-through cell used to collect parameter stabilization measurements was disconnected and groundwater was transferred directly into laboratory-provided sample containers from the dedicated discharge tubing. Sample containers were then capped with appropriately lined lids and placed in an insulated sample cooler with bagged ice. The samples were stored and transferred under full chain-of-custody protocol to EMAX Laboratories, Inc. (EMAX) located in Torrance, California. EMAX has been evaluated and approved by Naval Facilities Engineering Service Center and is approved by the State of California, Department of Health Services.

5.3.1 Quality Control Samples

Quality control (QC) sample data were generated to assess the precision and accuracy of the analytical results. The types, numbers, and frequencies of field QC samples are specified in SAP Worksheet #12 (Trevet 2013). Field QC samples collected during the groundwater sampling events included field duplicates, equipment rinsates, source-water blanks, and trip blanks. Field duplicates were collected at a rate of 10 percent of the normal samples collected. Equipment/ rinsate blanks were collected from nondedicated pumps at a rate of one per sampling day to verify decontamination effectiveness. Source blanks were collected at a rate of one per batch of final decontamination water per event. One laboratory-supplied trip blank was submitted for each cooler containing samples for analysis of VOCs or total petroleum hydrocarbons in the purgeable (gasoline) range (TPHg).

5.3.2 Equipment Decontamination

All nondedicated sampling equipment and field measurement devices were decontaminated before and after collecting each groundwater sample to prevent cross-contamination of samples. Complete decontamination procedures for sampling equipment and field measuring devices are further described in the SAP (Trevet 2013).

5.4 Investigation-Derived-Waste Management

Purged groundwater and decontamination water generated during the four events was stored in a mobile tank located within Building 96 for later disposal. Wastewater generated during the events was discharged into the sanitary sewer system at Pump Station 32 on Treasure Island in accordance with Trevet's San Francisco Public Utilities Commission wastewater discharge permit issued August 15, 2012. A copy of this discharge permit is presented as Appendix B. Personal protective equipment waste generated during field activities consisted mainly of nitrile sampling gloves, which were collected in a plastic trash bag and disposed of in on-site trash bins.

5.5 Soil Gas Sampling

Soil gas samples from IR Site 21 were collected in accordance with the current approved SAP (Trevet 2013) and California Department of Toxic Substances Control guidance. Soil gas sampling was performed at IR Site 21 during the December 2013 event.

Before sampling, a shut-in test was performed on the assembled sampling manifold by tightening all fittings, evacuating the apparatus, and checking for pressure stability. If the pressure reading was not stable over at least 1 minute, the apparatus was tightened and the shut-in test was repeated.

Prior to sampling, each soil gas probe was purged of seven purge volumes, which was demonstrated to be the optimum purge amount during previous sampling at the site (Shaw 2012a). Purging was conducted by drawing air out of the probe using an electric vacuum pump. Purging flow rates between 100 to 200 milliliters per minute (mL/min) and vacuums less than 100 inches of water column were maintained.

Once purging was complete, the soil gas sample was collected in a 1-liter Silonite™ canister provided by the analytical laboratory. An in-line flow regulator (provided by the analytical laboratory) connected to the sample canister was used to regulate the sampling flow rate to approximately 100 to 200 mL/min, and the sampling continued until a vacuum reading of 5 inches of mercury was attained in the sample canister. During sampling, a leak test was conducted to ensure the integrity of the surface seal and aboveground fittings. A plastic shroud covering the sampling apparatus and wellhead was filled with 25 percent helium to act as the leak-test tracer gas. Soil gas samples were analyzed for helium in addition to other target compounds to perform a quantitative evaluation of potential leaks in the sampling apparatus.

The samples were stored and transferred under full chain-of-custody protocol to ALS Global (ALS) located in Simi Valley, California. ALS has been evaluated and approved by Naval Facilities Engineering Service Center and is approved by the State of California, Department of Health Services.

5.6 Laboratory Analysis and Data Validation

The following sections summarize the laboratory analysis of the groundwater and soil gas samples collected during the 2013 monitoring program. Third-party data validation of the groundwater and soil gas results is also summarized.

5.6.1 Groundwater Sample Laboratory Analysis

Upon receipt at the analytical laboratory, groundwater and quality assurance (QA)/QC samples were logged and analyzed for the following in accordance with the SAP (Trevet 2013):

Table 5-2. Groundwater Analytical Program Summary

Site	Analyte and Method
IR Site 6	VOCs by U.S. EPA Method 8260B
	Total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) by U.S. EPA Method 8015 modified
	Methane, ethane, and ethene by method RSK-175
	Chloride and sulfate by U.S. EPA Method 300.0
	Nitrate as nitrogen by U.S. EPA Method 353.3
	Sulfide by U.S. EPA Method 376.1
	Alkalinity by Standard Method 2320B
IR Site 12 – SWDA Westside	VOCs by U.S. EPA Method 8260B
	TPHg, TPHd, and TPHmo by U.S. EPA Method 8015 modified
	Total and dissolved metals by U.S. EPA Method 6020A
	Ra-226 by U.S. EPA Method 903.0
	Total dissolved solids (TDS) by U.S. EPA Method 160.1
	Total suspended solids (TSS) by U.S. EPA Method 160.2
	Alkalinity, ferrous iron, and manganese by Hach field kits
IR Site 12 – 175 Gateview Avenue Petroleum Area	TPHg, TPHd, and TPHmo by U.S. EPA Method 8015 modified
	Total and dissolved metals by U.S. EPA Method 6020A
	Ra-226 by U.S. EPA Method 903.0
	Methane, ethane, and ethene by method RSK-175
	Chloride and sulfate by U.S. EPA Method 300.0
	Nitrate as nitrogen by U.S. EPA Method 353.3
	Sulfide by U.S. EPA Method 376.1
	Total dissolved solids (TDS) by U.S. EPA Method 160.1
	Total suspended solids (TSS) by U.S. EPA Method 160.2
	Alkalinity, ferrous iron, and manganese by Hach field kits
IR Site 21	VOCs by U.S. EPA Method 8260B
	Methane, ethane, and ethene by method RSK-175
IR Site 24	VOCs by U.S. EPA Method 8260B
	Methane, ethane, and ethene by method RSK-175
	Sulfate by U.S. EPA Method 300.0
	Alkalinity by Standard Method 2320B
	Ferrous iron, and manganese by Hach field kits

5.6.2 Soil Gas Sample Laboratory Analysis

Soil gas samples and QA/QC samples were submitted to ALS for analysis of the following:

- VOCs by U.S. EPA Method TO-15
- Oxygen, methane, carbon dioxide, and helium by U.S. EPA Method 3C modified
- Hydrogen sulfide by ASTM D 5504-08

5.6.3 Third-Party Data Validation

After laboratory analytical results were received from EMAX and ALS, the data were submitted to Laboratory Data Consultants, Inc. (LDC) for validation. Following U.S. EPA protocols (USEPA 2008), LDC performed Level III validation on 90 percent of the results and Level IV validation on 10 percent of the results.

5.7 SAP Variances

The following summarizes variances from the monitoring and sampling plans presented in the SAPs (Trevet 2012a, 2012b, and 2013):

- During the March 2013 groundwater sampling event, groundwater samples from IR Site 6 wells 06-MW25 and 06-MW26 were erroneously not analyzed for VOCs. This issue was recognized after demobilization and the sampling team was mobilized to resample the wells on April 16, 2013.

- Due to an ongoing non-time-critical removal action (NTCRA) in progress at IR Site 12, four wells (12-MW08, 12-MW09, 12-MW29, and 12-MW30) at SWDA Westside were inaccessible during all or part of the 2013 monitoring period. Well 12-MW08 is located within a water-filled excavation associated with the NTCRA and could not be reached. This well was removed from the current monitoring program (Trevet 2013). Well 12-MW09 could not be accessed for gauging because it is beneath a large storage container. Wells 12-MW29 and 12-MW30 were originally scheduled for annual sampling during the December 2012 event. However, access was restricted due to the NTCRA. These wells were sampled during the June 2013 event.

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Section 6 Data Quality and Validation

The following sections provide a summary of the QA/QC and data validation results for analytical data generated during the groundwater and soil gas sampling activities at IR Sites 6, 12, 21, and 24.

The data quality evaluation was based on verification of field and laboratory QA measures to determine the overall quality and validity of analytical results. Field activity QA was managed through appropriate documentation and through the collection of field QC samples. Additionally, QA/QC measures were employed by the laboratory to determine the precision and accuracy of the analytical system as measured by laboratory control samples, matrix spike/matrix spike duplicates, surrogate spikes, and internal standards (where applicable). Results from trip blanks and method blanks were also analyzed to assess the possibility of external contamination of environmental samples during field and laboratory activities. Evaluation of the data quality helps determine whether analytical data obtained during the 2013 monitoring events are considered usable for the intended purpose of monitoring groundwater quality.

The following sections provide field and laboratory QA sample results, data validation results, and the data usability evaluation considered during data interpretation.

6.1 Field Documentation

A number of QA/QC measures were employed in the field to ensure that the collected groundwater and soil gas samples were representative of site conditions at the time of sampling. Prior to the collection of any sample, all nondedicated sampling equipment was decontaminated to minimize the chance of cross-contamination. Field QC samples were collected and analyzed to provide QC checks on the representativeness of the environmental samples collected and the handling procedures. Field equipment was calibrated daily and documented in the field notebook to minimize the collection of erroneous field data. Field documentation protocols included the use of field notebooks, groundwater sample collection forms, and chain-of-custody forms.

6.2 Field Quality Control Samples

Field QC samples collected during the groundwater sampling activities included trip blanks, field duplicates, equipment rinsate samples, and source-water blank samples. Field QC samples collected during the soil gas sampling activities included trip blanks and field duplicates. Leak-check analysis was also performed. Field contamination was assessed by the evaluation of trip blanks. In accordance with validation guidelines, sample concentrations were compared to concentrations reported in the trip blanks to determine whether sample qualification was deemed

necessary. The field QC samples were collected and analyzed in accordance with the approved SAP (Trevet 2013).

6.2.1 Trip Blanks

Trip blanks are analyzed to evaluate the accuracy of sample results by assessing whether storage and transportation of the field samples introduced VOC contamination from an outside source or if cross-contamination between samples occurred.

A groundwater trip blank sample consisted of three 40-milliliter volatile organic analysis, or VOA, vials with reagent-grade (analyte-free) water preserved with hydrochloric acid. EMAX prepared and provided the trip blanks for the four sampling events. A trip blank sample was placed in each sample cooler with bagged ice prior to collection of the first VOC sample each day. The trip blank sample was recorded on the chain-of-custody form. Each trip blank sample remained unopened throughout the sampling event.

A soil gas trip blank sample consisted of one evacuated 1-liter Silonite™ canister provided by ALS from the same batch as those used for normal soil gas sampling. The trip blank canister accompanied the normal samples throughout the sampling process but was not opened in the field. The trip blank canister was returned to ALS with the other sample canisters under chain-of-custody for analysis.

Trip blank results for the 2013 monitoring period are included in Tables 18 and 19. A total of 21 groundwater and one soil gas trip blank samples were submitted during the 2013 monitoring events. The trip blank samples were analyzed for VOCs by U.S. EPA Method 8260B (groundwater) or U.S. EPA Method TO-15 (soil gas), which are the identical to methods used for the normal field samples. No target analytes were reported in any of the groundwater trip blank samples. One analyte, toluene at 0.31 J (J indicates an estimated value) micrograms per cubic meter ($\mu g/m^3$), was reported in the soil gas trip blank sample. The presence of this trace concentration of toluene in the trip blank did not negatively impact the quality of the normal samples.

6.2.2 Field Duplicates

The purpose of field duplicate samples is to evaluate the precision of the overall sample collection and analysis process through the calculation of a relative percent difference (RPD) for duplicate pairs.

Field duplicates consist of two samples (a normal and a duplicate) of the same matrix collected at the same time and location, to the extent possible, and using the same sampling techniques. Duplicate samples were collected at a frequency of at least 1 sample per 10 samples for each monitoring event for both groundwater and soil gas.

The RPD QC limit for this project is 25 percent. Duplicate pairs that contain very low contaminant concentrations can produce even greater variation, leading to RPD outliers when the values are not significantly different. RPD values are non-representative when:

- Both the original and duplicate results are less than five times the reporting limit.
- One or both results were qualified as estimated or rejected or are a blank contaminant.
- Both results are not detected at the reporting limit.

Additionally, if the RPD values for duplicate pairs with concentrations that are less than five times the reporting limit exceed the RPD limit, then the duplicate pairs will be evaluated by comparing the absolute difference to the reporting limit. The data will be considered acceptable if the absolute difference is less than the reporting limit.

Data are not usually qualified based on RPD values alone. Instead, a third-party validator will use this information in conjunction with the other QC criteria to evaluate the overall quality of the data.

Field duplicate results for the 2013 monitoring period are included in Tables 7 through 17. For groundwater, a total of 16 field duplicate samples were collected during the monitoring events, which yielded 198 RPD values. For soil gas, one field duplicate sample was collected during the single monitoring event, which yielded 49 RPD values. None of the groundwater or soil gas RPD values exceeded the RPD QC limit. The overall RPD results did not indicate a systematic bias or significant problem with sample collection or analysis.

6.2.3 Equipment Rinsates

An equipment rinsate is a sample of analyte-free, reagent-grade water collected from a final rinse of sampling equipment after the decontamination procedure has been performed. Rinsate samples are collected directly from the sampling equipment, placed in appropriate pre-cleaned containers supplied by the analytical laboratory, and analyzed for the same analytes as the field samples under the same analytical conditions. Equipment rinsate samples, collected at a frequency of one per each day of sampling, help determine the effectiveness of the decontamination procedure and potential for cross-contamination during sampling events.

Equipment rinsate results for the 2013 monitoring period are included in Tables 18 and 19. Equipment rinsate samples for this project were collected from the decontaminated portable bladder pumps. A total of 13 equipment rinsate samples were collected during the monitoring events. No target analytes were reported in any of the equipment rinsate samples.

6.2.4 Source-Water Blanks

Source-water blank samples consist of analyte-free, reagent-grade water provided by the laboratory for use as the final rinse step in the decontamination process. Source-water blank

samples determine whether the water used for the equipment final rinse contributes to the analytes detected in the primary samples. Source-water blank samples are collected directly from the containers of final rinse water, placed in appropriate pre-cleaned containers supplied by the analytical laboratory, and analyzed for the same analytes as the field samples under the same analytical conditions. Source-water blank samples were collected at a frequency of one per lot of final rinse water used during each monitoring event.

A total of five source-water blanks were collected during the monitoring events. No target analytes were reported in any of the source-water blanks.

6.2.5 Leak-Check Analysis

The soil gas sampling method is subject to the leakage of atmospheric air into the soil gas sampling apparatus, which could potentially bias sample results low. To quantitatively evaluate potential leakage, the soil gas sampling apparatus and wellhead were covered with a shroud, which was filled with 25 percent helium during sampling. If there was a leak, the helium would enter the sample at a known concentration.

All soil gas samples were analyzed for helium by ALS using U.S. EPA Method 3C modified. Helium was reported in two of the five soil gas samples collected during the December 2013 sampling event (Table 16). Concentrations reported from these samples ranged from 0.0074 percent by volume (% v/v) to 0.27 % v/v. Based on the fraction of helium introduced into the shroud (25 % v/v), the leak-checking test indicated a maximum leakage rate of 1.0 percent, which is within the acceptable range according to the SAP (Trevet 2013). The leak-checking procedure indicated that the soil gas sample results are of acceptable quality.

6.3 Laboratory Quality Control

Laboratory QC samples were prepared and analyzed by the laboratory to monitor the analytical process. The laboratory QC parameters analyzed for this project included method blanks, laboratory replicates, continuing calibration verification, laboratory control samples, and matrix spike/matrix spike duplicate samples. The laboratory performed all QC sample analyses at the required frequency.

The detection of target analytes in field QC samples such as blanks were analyzed with respect to their associated environmental samples to make an overall judgment regarding whether any constituents reported in the environmental samples were contributed by conditions independent of the matrix sampled or are representative of site conditions.

During the 2013 monitoring period, several samples exceeded the laboratory holding time. These samples, which were to be analyzed for nitrate which has a 48-hour holding time, were discarded and new samples were collected following normal procedures (i.e., the wells were re-

purged and sampled). The holding time criteria were met for all samples reported during the monitoring period.

6.4 Data Verification

The laboratory was required to submit the data in hardcopy and electronic form. The electronic copy was verified 100 percent against the hard copy to avoid discrepancies. All changes made to the electronic deliverable are documented and retained in the Trevet project file.

6.5 Data Validation Results

The data were validated by LDC, a third-party subcontractor located in Carlsbad, California, to assure that the analytical results reported from the laboratory were suitable and of sufficient quality to meet the data quality objectives as discussed in the approved SAP (Trevet 2013). Validation was performed in accordance with Environmental Work Instruction (EWI) #1 (NAVFAC 2001). Data for this project underwent 90 percent Level III and 10 percent Level IV validation as outlined in EWI #1 Section 2.2. Validation included the review of laboratory QC summaries (e.g., blank, calibrations, spike recoveries, duplicates) and of raw data, including chromatograms and quantitation reports.

These analyses were validated using U.S. EPA guidelines for organic and inorganic data review (USEPA 2008 and 2010) and U.S. EPA SW-846 (2007) methods for evaluating solid waste, as applicable to analytical methods used during the monitoring period.

Analytical data were validated and qualifiers were assigned in accordance with the applicable U.S. EPA National Functional Guidelines (2008 and 2010). When applicable, data validation qualifiers were noted to the right of the data presented in the analytical results tables. These data validation qualifiers are defined as follows:

- U – indicates the compound or analyte was not reported at or above the stated limit.
- J – indicates an estimated value.
- UJ – indicates the compound or analyte was not reported and the sample detection limit is an estimated value.
- R – indicates the compound is rejected.

Based upon the cursory and full data validation, all results are valid and usable for all purposes. No results were rejected. Data validation reports are presented in Appendix C.

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Section 7 Groundwater and Soil Gas Monitoring Results

The results of the four 2013 groundwater monitoring and one soil gas monitoring events are summarized and discussed in the following sections.

7.1 Groundwater Level Monitoring

Groundwater level monitoring data for IR Sites 6, 12, 21, and 24 are summarized at the end of this report in Tables 3 through 6, respectively. These tables also include historical groundwater level data, which were compiled from the Naval Installation Restoration Information Solution (NIRIS) database. The following table provides summary statistics for the sites during the monitoring period. The low-tide height corresponding to the time that groundwater levels were measured is provided for reference. IR Site 6 is not included since well TOC elevations were not available. The IR Site 6 wells will be surveyed for TOC elevations in 2015.

Table 7-1. Groundwater Elevation Data Summary

Site	Gauging Date	Minimum Groundwater Elevation[1] (Well Observed)	Maximum Groundwater Elevation[1] (Well Observed)	Average Groundwater Elevation[1]	Low-Tide Height (in feet)
IR Site 12	06/24/13	2.94 (12-MW18)	4.95 (12-MW03)	4.16	-1.8
IR Site 21	03/04/13	3.94 (21-MW09A)	4.01 (21-MW02A)	3.97	0.3
	12/9/13	4.08 (21-MW02A)	4.18 (21-IP07)	4.13	1.8
IR Site 24	03/05/13	4.89 (24-TW-16)	7.51 (24-TW-11)	6.21	0.1
	12/10/13	4.46 (24-TW-16)	6.28 (24-TW-11)	5.38	1.3

1. feet above mean sea level

The groundwater level measurements for the sites were consistent with historical data.

Groundwater elevation contours and flow directions for IR Sites 12, 21, and 24 for June 2013, December 2013, and December 2013, respectively, are shown on Figures 8 through 10. The following summarizes potentiometric surface data for the shallow water-bearing zones at IR Sites 6, 12, 21, and 24.

IR Site 6

Depth to groundwater at IR Site 6 ranged from 4.67 feet below TOC in September 2013 to 6.30 feet below TOC in March 2013. A hydraulic gradient could not be calculated for IR Site 6 due to the lack of well elevation data. However, based on previous monitoring when additional wells

were at the site, groundwater historically flowed laterally in a north-to-northeast direction toward the shoreline.

IR Site 12

The groundwater flow direction at IR Site 12 varied across the site in June 2013 (Figure 8). In general, the groundwater flow direction was approximately radial outward from the interior of TI toward the shore. In the northern portion of the site near SWDA Bayside, SWDA North Point, and the Mariner Drive Petroleum Area, groundwater flow was to the north with an average gradient ranging from 0.001 to 0.006 feet per foot (ft/ft). In the western portion of the site near the 175 Gateview Avenue Petroleum Area, groundwater flow was to the west with an average gradient of 0.002 ft/ft. These flow directions and gradients were consistent with historical observations.

IR Site 21

During the March 2013 monitoring event, groundwater flowed to the east and southeast near Building 3 with an average gradient ranging from 0.002 to 0.005 ft/ft. Closer to the shore the gradient reversed, flowing to the west and northwest with an average gradient ranging from 0.005 to 0.010 ft/ft. The cause of the hydrostatic low and reversal away from the shore is unknown but may be related to tidal influence.

The December 2013 groundwater elevations indicated a general flow to the south, which was inconsistent with the historically southeasterly groundwater flow (Figure 9). However, only three wells were included in the current monitoring program (Trevet 2013). Given the minimal number of wells gauged, close spacing, and relatively flat water table, the groundwater flow direction indicated by the December 2013 measurements was likely not representative of the groundwater flow direction across the site.

IR Site 24

During the March 2013 monitoring event, the groundwater flow direction ranged from north to northeast, generally toward the shore. The groundwater flow direction in the western portion of the site was generally toward the north with an average gradient ranging from 0.003 to 0.010 ft/ft. In the eastern portion of the site, groundwater flow was generally to the northeast with an average gradient ranging from 0.002 to 0.003 ft/ft.

The December 2013 groundwater elevations indicated a general northeasterly groundwater flow in the western portion of the site and an easterly flow in the eastern portion of the site (Figure 10). The average groundwater gradient varied from approximately 0.016 ft/ft in the western portion of the site to approximately 0.004 ft/ft in the central portion of the site. These results were generally consistent with historical measurements.

7.2 Groundwater Analytical Results

The following summarizes groundwater analytical results for the 2013 monitoring period for IR Sites 6, 12, 21, and 24. Groundwater analytical data are summarized in Tables 7 through 15. These tables also include historical results, which were compiled from the NIRIS database. Laboratory analytical and data validation reports are included as Appendix C.

Trend analysis was performed on selected COPC or COC concentration data from each well using the Mann-Kendall (M-K) statistical test to evaluate contaminant concentration trends. The M-K test is a non-parametric analytical method for the detection of a trend in a time series. This test evaluates whether the dependent variable, in this case contaminant concentration, tends to increase or decrease with the independent value, time. As used in this report, the M-K test measures the qualitative direction and significance of a time-concentration trend. The chemicals selected for M-K analysis were those that have been identified as COPCs or COCs or have historically exceeded site screening levels. Natural attenuation parameters were not included in the M-K testing.

The software used for this evaluation, the GSI Mann-Kendall Toolkit, was used to perform the M-K test. For each constituent for a particular well, the GSI Mann-Kendall Toolkit calculated the coefficient of variance, the M-K S-value (a cumulative summing of the sign differences between data points in the series), and the confidence factor based on the variance of the S-value, which is expressed as a percentage. Increasing or decreasing trends were identified based on the magnitude and sign of the S-value ($S>0$ is an increasing trend and $S<0$ is a decreasing trend) coupled with a confidence factor greater than 95%. Probable trends were identified when the confidence factor ranged between 90 and 95%. Stable trends were identified based on a confidence factor less than 90% and a low coefficient of variation. No trend was identified based on a confidence factor less than 90% and a high coefficient of variation, meaning that the data exhibited more scatter. The results of the M-K tests, including level of statistical significance, are presented in Appendix D.

The analytical data evaluations presented in the following sections compare detected analyte concentrations against ambient levels, screening levels, or project remedial goals for the 2013 monitoring period. For IR Sites 6 and 12, the ambient concentrations of metals in groundwater were presented in a technical memorandum (Tetra Tech 2001) and screening levels were developed in the 2007 annual groundwater monitoring report (PTES 2008). Remedial goals and risk-based concentrations for IR Site 21 were presented in the Final ROD (DON 2013a) and are based on future commercial and residential exposure scenarios, respectively. Remedial goals and alternate remedial goals for IR Site 24 were developed in the Focused Feasibility Study (SulTech 2008) based on future commercial and residential exposure scenarios, respectively.

7.2.1 IR Site 6 Groundwater Analytical Results

Groundwater samples were collected from IR Site 6 monitoring wells 06-MW25 and 06-MW26 during the four quarterly sampling events in 2013. Groundwater samples from IR Site 6 were analyzed for TPHg, TPHd, TPHmo, VOCs, ethane, ethene, methane, chloride, nitrate as nitrogen, sulfate, and sulfide. Metals are not included in the analytical suite at IR Site 6 because they are not COPCs and were not carried forward in the site investigation and remedial investigation phases.

The following subsections discuss analytical results for TPH, VOCs, and natural attenuation parameters at IR Site 6. Figure 11 presents groundwater analytical data for the four 2013 monitoring event at IR Site 6.

7.2.1.1 TPH and VOCs

TPH and VOC results for IR Site 6 are summarized in Figure 11 and Table 7. Time-series concentration graphs for TPHd, TPHg, benzene, toluene, ethylbenzene, total xylenes, and naphthalene are presented in Appendix D.

During the four sampling events, TPHg, TPHd, benzene, toluene, ethylbenzene, and total xylenes (BTEX), carbon disulfide, cis-1,2-dichloroethene (cis-1,2-DCE), isopropyl benzene, TCE, and naphthalene were reported in groundwater samples. Of these compounds, only ethylbenzene at a maximum concentration of 76 µg/L (well 06-MW25 on April 16, 2013; Table 7) exceeded the toxicity screening criterion. Concentrations of petroleum-related compounds generally decreased during the monitoring period. However, due to the statistically few sampling events for the wells at IR Site 6, M-K tests indicated stable or no trend for these compounds (Appendix D). Additional data points are necessary determine a statistical trend to support the visual indication of decreasing petroleum hydrocarbon concentrations.

7.2.1.2 Natural Attenuation Parameters

Dissolved gasses (methane, ethane, and ethene), chloride, sulfate, nitrate, and sulfide were analyzed in groundwater samples to provide information on natural attenuation processes at the site. These parameters are not COPCs. Results for these analyses are presented in Table 8.

Methane was the only dissolved gas reported at IR Site 6, ranging from 1,600 µg/L to 76 µg/L. These methane concentrations are consistent with anaerobic conditions in the area. Anaerobic conditions are generally indicative of inefficient natural attenuation of petroleum hydrocarbons. Dissolved ion results from IR Site 6 during 2013 were also indicative of reducing conditions and slow natural attenuation processes.

7.2.2 IR Site 12 – SWDA Westside Results

Groundwater samples were collected from SWDA Westside from monitoring wells 12-MW28, 12-MW29, and 12-MW30 during the June 2013 sampling event. Groundwater samples from these wells were analyzed for dissolved and total metals (including mercury), TDS, TSS, TPHg, TPHd, TPHmo, Ra-226, and VOCs.

The following subsections discuss analytical results for TPH, VOCs, metals, Ra-226, and geochemistry parameters at SWDA Westside. Figure 12 presents groundwater analytical data for the June 2013 monitoring event at IR Site 12.

7.2.2.1 TPH and VOCs

TPH and VOC results are summarized in Table 9. At SWDA Westside, trace concentrations of TPHd (54 J µg/L) and TPHmo (57 J µg/L) were reported in the sample from well 12-MW29. Detectable concentrations of chloroform, cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and TCE were reported in groundwater samples. However, the TPH and VOC concentrations were less than the toxicity screening criteria.

7.2.2.2 Metals

Metals results are summarized in Figure 12 and Table 10. Barium, cobalt, and nickel were the only metals that exceeded the higher of the ambient concentration or the toxicity screening criterion during the 2013 monitoring period (Table 9). Barium, with a maximum concentration of 1,250 µg/L in well 12-MW29, exceeded the ambient concentration of 120 µg/L in the three wells sampled. Cobalt, with a maximum concentration of 1.84 J µg/L in well 12-MW28, exceeded the ambient concentration of 1.4 µg/L in one well. Nickel, with a maximum concentration of 8.90 µg/L in well 12-MW30, exceeded the toxicity screening criterion of 8.2 µg/L in one well. Concentrations of these elements during 2013 were consistent with historical levels.

7.2.2.3 Radium-226

Radium results are summarized in Table 10. Ra-226 was not reported in any of the samples. The Ra-226 reporting limits ranged from 0.152 picocuries per liter (pCi/L) to 0.467 pCi/L. The Ra-226 screening criterion is 5 pCi/L.

7.2.2.4 Geochemistry

TDS and TSS results are summarized in Table 11. TDS values ranged from 380 milligrams per liter (mg/L) in well 12-MW30 to 11,600 mg/L in well 12-MW28. TSS results were less than the reporting limit of 10 mg/L for all three wells sampled. The results indicate that the wells at SWDA Westside contained fresh to brackish groundwater with a low load of suspended solids during the June 2013 sampling event.

7.2.3 IR Site 12 – 175 Gateview Avenue Petroleum Area Results

Groundwater samples were collected from the 175 Gateview Avenue Petroleum Area from monitoring wells 12-MW05, 12-MW20, 12-MW22, and 12-MW23 during the sampling event in June 2013. Groundwater samples from these wells were analyzed for dissolved and total metals (including mercury), TPHg, TPHd, TPHmo, Ra-226, methane, ethane, ethene, chloride, sulfate, nitrate as nitrogen, sulfide, TDS, TSS, ferrous iron, and manganese.

The following subsections discuss analytical results for TPH, metals, Ra-226, and natural attenuation/geochemistry parameters at the 175 Gateview Avenue Petroleum Area. Figure 12 presents groundwater analytical data for the June 2013 monitoring event at IR Site 12.

7.2.3.1 TPH

TPH results are summarized in Table 9. TPHg was reported in only one well, 12-MW05, at a trace concentration of 12 J µg/L. TPHd was reported in all four wells sampled at a maximum concentration of 720 µg/L in well 12-MW05. The TPH screening criterion of 1,400 µg/L was not exceeded during the 2013 monitoring period. TPH concentrations were generally consistent with historical levels. M-K tests indicated stable to decreasing trends for TPH.

7.2.3.2 Metals

Metals results are summarized in Figure 12 and Table 10. Arsenic and barium were the only metals that exceeded the higher of the ambient concentration or the toxicity screening criterion during the 2013 monitoring period (Table 9). Arsenic, with a maximum concentration of 133 µg/L in well 12-MW05, exceeded the toxicity screening concentration of 36 µg/L in three of the four wells sampled (Figure 12). Barium, with a maximum concentration of 131 µg/L in well 12-MW20, exceeded the ambient concentration of 120 µg/L in one well. Concentrations of these elements during 2013 were consistent with historical levels. M-K tests indicated stable to decreasing trends for both arsenic and barium concentrations in groundwater (Appendix D). The time-concentration plots included in Appendix D also indicated a generally positive correlation between arsenic and TPH concentration. For example, wells with higher reported TPH concentrations (e.g., 12-MW05 and 12-MW23) generally exhibited higher arsenic concentrations.

7.2.3.3 Radium-226

Radium results are summarized in Table 10. Ra-226 was not reported in any of the samples. The Ra-226 reporting limits ranged from 0.0828 pCi/L to 0.188 pCi/L. The Ra-226 screening criterion is 5 pCi/L.

7.2.4 Natural Attenuation/Geochemistry Parameters

Dissolved gasses (methane, ethane, and ethene), TDS, TSS, chloride, sulfate, nitrate, and sulfide were analyzed in groundwater samples to provide information on natural attenuation processes acting at the site. These parameters are not COPCs. Results for these analyses are presented in Table 11.

Methane was reported in all four of the wells sampled at the 175 Gateview Avenue Petroleum Area. The maximum reported methane concentration was 8,800 µg/L. The presence of methane concentrations at this level are consistent with anaerobic conditions in the area. Ferrous iron, dissolved manganese, dissolved oxygen, and oxidation-reduction potential values measured at the site were also consistent with anaerobic conditions. The reducing/anaerobic conditions likely influence dissolved arsenic concentrations in the 175 Gateview Avenue Petroleum Area.

TDS concentrations ranged from 392 to 8,200 mg/L. TSS concentrations ranged from below the 10 mg/L reporting limit to 16 mg/L. The results indicate that groundwater in the four sampled wells was relatively fresh with a low load of suspended solids during the June 2013 sampling event.

7.2.5 IR Site 21 Groundwater Analytical Results

The following sections discuss analytical results for VOCs and dissolved gasses at IR Site 21. Figure 13 presents groundwater analytical data for the December 2013 monitoring event.

7.2.5.1 PCE

During the monitoring period, PCE was reported in samples from two of the three wells sampled (Table 11). The maximum reported PCE concentration was 3.7 µg/L from well 21-MW02A during the December 2013 monitoring event. PCE concentrations did not exceed the project remedial goal of 86 µg/L or the risk-based concentration of 5 µg/L during the monitoring period. PCE concentrations during the 2013 monitoring period were consistent with historical levels.

M-K tests indicated that for PCE concentrations, well 21-IP07 exhibited no trend, well 21-MW02A exhibited a probable increasing trend, and well 21-MW09A exhibited a decreasing trend (Appendix D). However, the PCE concentrations in 21-MW02A were well below the project remedial goal and the concentration increases were slight.

7.2.5.2 TCE

During the monitoring period, TCE was reported in samples from two of the three wells sampled (Table 11). The maximum reported TCE concentration was 3.8 µg/L from well 21-MW09A during the December 2013 monitoring event. TCE concentrations did not exceed the project remedial goal of 56 µg/L or the risk-based concentration of 11.5 µg/L during the monitoring

period. TCE concentrations during the 2013 monitoring period were consistent with historical levels.

M-K tests indicated that for TCE concentrations, wells 21-IP07 and 21-IP02A exhibited no trend and well 21-MW09A exhibited a decreasing trend (Appendix D).

7.2.5.3 Cis-1,2-DCE

During the monitoring period, cis-1,2-DCE was reported in samples from all three of the wells sampled (Table 11). The maximum reported cis-1,2-DCE concentration was 520 µg/L from well 21-IP07 during the March 2013 monitoring event. Cis-1,2-DCE concentrations did not exceed the project remedial goal of 713 µg/L or the risk-based concentration of 630 µg/L during the monitoring period. Cis-1,2-DCE concentrations during the 2013 monitoring period were within the historical range.

M-K tests indicated that for cis-1,2-DCE concentrations, well 21-IP07 exhibited a probable increasing trend, well 21-MW02A exhibited no trend, and 21-MW09A exhibited a probable decreasing trend. However, based on visual analysis, concentration of cis-1,2-DCE in well 21-IP07 has indicated a stabilizing or decreasing trend in 2012 and 2013 (Appendix D).

7.2.5.4 Trans-1,2,-DCE

During the monitoring period, trans-1,2-DCE was reported in samples from all three of the wells sampled (Table 11). The maximum reported trans-1,2-DCE concentration was 28 µg/L from well 21-IP07 during the March 2013 monitoring event. Trans-1,2-DCE concentrations did not exceed the project remedial goal of 1,420 µg/L or the risk-based concentration of 170 µg/L during the monitoring period. Trans-1,2-DCE concentrations during the 2013 monitoring period were consistent with historical levels.

M-K tests indicated that for trans-1,2-DCE concentrations, well 21-IP07 exhibited an increasing trend, well 21-MW02A exhibited no trend, and 21-MW09A exhibited a stable trend. However, based on visual analysis, concentration of trans-1,2-DCE in well 21-IP07 has indicated a stabilizing or decreasing trend in 2012 and 2013 (Appendix D).

7.2.5.5 Vinyl Chloride

During the monitoring period, vinyl chloride (VC) was reported in samples from all three of the wells sampled (Table 11). The maximum reported VC concentration was 810 µg/L from well 21-IP07 during the March 2013 monitoring event. VC concentrations exceeded the project remedial goal of 165 µg/L in well 21-IP07. VC concentrations exceeded the risk-based concentration of 2 µg/L in wells 21-IP07, 21-MW02A, and 21-MW09A. VC concentrations during the 2013 monitoring period were generally consistent with historical levels.

M-K tests indicated that for VC concentrations, well 21-IP07 exhibited an increasing trend and wells 21-MW02A and 21-MW09A exhibited no trend. However, based on visual analysis, concentration of VC in well 21-IP07 has indicated a stabilizing or decreasing trend in 2012 and 2013 (Appendix D).

7.2.5.6 Dissolved Gasses

Dissolved gasses (methane, ethane, and ethene) were analyzed in groundwater samples to provide information on natural attenuation processes acting at the site. These parameters are not COPCs. Results for these analyses are presented in Table 13.

Methane, ethane, and ethene were reported in samples from all three wells sampled at IR Site 21. Methane concentrations ranged from 150 µg/L to 7,500 µg/L. Ethane concentrations ranged from 26 µg/L to 90 µg/L. Ethene concentrations ranged from 0.44 J µg/L to 30 µg/L. These methane concentrations are consistent with anaerobic conditions in the area, which is favorable for the natural attenuation of chlorinated hydrocarbons. The presence of ethane and especially ethene indicated active reductive dechlorination of the chlorinated ethene contaminants at the site.

7.2.6 IR Site 24 Groundwater Analytical Results

The following subsections discuss analytical results for VOCs and natural attenuation parameters at IR Site 24. Figures 14 through 18 and Tables 14 and 15 present groundwater analytical data for the December 2013 monitoring event at IR Site 24.

7.2.6.1 PCE

During the monitoring period, PCE was reported in samples from five of 38 wells sampled. The maximum reported PCE concentration was 50 µg/L from well 24-TW-11 during the December 2013 monitoring event (Table 13). PCE concentrations did not exceed the project remedial goal of 86 µg/L. PCE concentrations exceeded the alternate project remedial goal of 5 µg/L only at well 24-TW-11. PCE concentrations during the 2013 monitoring period were generally consistent with historical levels.

As shown on Figure 14, PCE in groundwater above the alternate project remedial goal was distributed in one plume associated with well 24-TW-11 in the western portion of the site near Building 99. Concentrations of PCE are localized to the source zone of the site and widespread PCE contamination has been removed.

M-K tests indicated that most wells exhibited a stable trend or no trend in current and historical PCE concentrations. Five wells exhibited decreasing or probably decreasing PCE trends. One well (24-TW-48) exhibited an increasing PCE trend (Appendix D).

7.2.6.2 TCE

During the monitoring period, TCE was reported in samples from 20 of 38 wells sampled (Table 13). The maximum reported TCE concentration was 74 µg/L from well 24-TW-11 during the December 2013 monitoring event. TCE concentrations exceeded the project remedial goal of 56 µg/L and the alternate project remedial goal of 16 µg/L only at well 24-TW-11. TCE concentrations during the 2013 monitoring period were generally consistent with historical levels.

As shown on Figure 15, TCE in groundwater above the project remedial goal was distributed in one plume associated with well 24-TW-11 in the western portion of the site near Building 99. Concentrations of TCE are localized to the source zone of the site and widespread TCE contamination has been removed.

M-K tests indicated that most wells exhibited a stable trend or no trend in current and historical TCE concentrations. Eleven wells exhibited decreasing or probably decreasing TCE trends. No wells exhibited increasing or probably increasing TCE trends (Appendix D).

7.2.6.3 Cis-1,2-DCE

During the monitoring period, cis-1,2-DCE was reported in samples from all 38 of 38 wells sampled (Table 13). The maximum reported cis-1,2-DCE concentration was 3,000 µg/L from well 24-EW11 during the March 2013 monitoring event. Cis-1,2-DCE concentrations exceeded the project remedial goal of 712 µg/L and the alternate project remedial goal of 630 µg/L at wells 24-EW11 and 24-TW-48. Cis-1,2-DCE concentrations during the 2013 monitoring period were generally consistent with historical levels. Cis-1,2-DCE and VC make up the majority of the dissolved VOC contamination at IR Site 24.

As shown on Figure 16, cis-1,2-DCE in groundwater above the project remediation goal was distributed in one plume associated with well 24-TW-48 in the western portion of the site. Based on the March 2013 results, cis-1,2-DCE in groundwater above the project remediation goal was also present in a second plume associated with well 24-EW11 in the central portion of the site.

M-K tests indicated that many wells exhibited a stable trend or no trend in current and historical cis-1,2-DCE concentrations. Fourteen wells exhibited decreasing or probably decreasing cis-1,2-DCE trends. Two wells (24- TW-37 and 24-TW-41) exhibited increasing cis-1,2-DCE trends. However, the cis-1,2-DCE concentrations in samples from these wells were well below the project remediation goal (Appendix D).

7.2.6.4 Trans-1,2,-DCE

During the monitoring period, trans-1,2-DCE was reported in samples from 31 of 38 wells sampled (Table 13). The maximum reported trans-1,2-DCE concentration was 10 µg/L from

well 24-EW11 during the March 2013 monitoring event. There is no project remedial goal for trans-1,2-DCE. Trans-1,2-DCE concentrations during the 2013 monitoring period were generally consistent with historical levels. Trans-1,2-DCE concentrations in groundwater for the December 2013 event are shown on Figure 17.

M-K tests indicated that many wells exhibited a stable trend or no trend in current and historical trans-1,2-DCE concentrations. Thirteen wells exhibited decreasing or probably decreasing trans-1,2-DCE trends. No wells exhibited increasing or probably increasing trans-1,2-DCE trends (Appendix D).

7.2.6.5 Vinyl Chloride

During the monitoring period, VC was reported in samples from 37 of 38 wells sampled (Table 13). The maximum reported VC concentration was 1,300 µg/L from well 24-EW11 during the March 2013 monitoring event. VC concentrations exceeded the project remedial goal of 165 µg/L at wells 24-EW11, 24-TW-47, and 24-TW-48. VC concentrations exceeded the alternate project remedial goal of 2 µg/L at 16 wells (Table 13). VC concentrations during the 2013 monitoring period were generally consistent with historical levels. Cis-1,2-DCE and VC make up the majority of the dissolved VOC contamination at IR Site 24.

As shown on Figure 18, VC in groundwater above the project remediation goal and alternate was distributed in plumes associated with wells 24-BB38, 24-EW11, 24-TW-04, 24-TW-11, 24-TW-16, 24-TW-41, and 24-TW-48, in the western, central, and eastern portions of the site.

M-K tests indicated that many wells exhibited a stable trend or no trend in current and historical VC concentrations. Ten wells exhibited decreasing or probably decreasing VC trends. Four wells (24-EW11, 24-TW-14, 24-TW-37, and 24-TW-41) exhibited increasing or probably increasing VC trends (Appendix D).

7.2.6.6 Natural Attenuation Parameters

Dissolved gasses (methane, ethane, and ethene), sulfate, alkalinity, and ferrous iron were analyzed in groundwater samples to provide information on natural attenuation processes acting at the site. These parameters are not COPCs. Results for these analyses are presented in Table 15.

Methane and ethane were reported in all 15 of the wells sampled at IR Site 24 during the 2013 monitoring period. The maximum reported methane concentration was 18,000 µg/L from well 24-EW6. The maximum reported ethane concentration was and 230 µg/L from well 24-TW-11. Ethene was also reported in eight of the 15 wells sampled at a maximum concentration of 760 µg/L from well 24-TW-48. The dissolved gas concentrations are consistent with anaerobic conditions in the area, which is favorable for the natural attenuation of chlorinated hydrocarbons.

Ferrous iron, dissolved oxygen, and oxidation-reduction potential values measured at the site are also consistent with anaerobic conditions. The presence of ethane and especially ethene indicates active reductive dechlorination of the chlorinated ethene contaminants at the site.

7.3 Soil Gas Analytical Results

The following summarizes soil gas analytical results for the 2013 monitoring period for IR Site 21. Soil gas analytical data are summarized in Tables 16 and 17 and Figure 19. These tables also include historical results, which were compiled from the NIRIS database. Laboratory analytical and data validation reports are included as Appendix C. The analytical data evaluation presented in the following sections compare detected analyte concentrations against site-specific screening levels (SSSLs), which were developed in the Final Human Health Risk Assessment Addendum (Shaw 2012b). The SSSLs, presented in Table 16, were based on sub-slab soil gas samples under a residential exposure scenario for a future slab-on-grade building at a target excess lifetime cancer risk (ELCR) of 10^{-6} (1 in 1,000,000).

7.3.1 IR Site 21 Soil Gas Analytical Results

Soil gas samples were collected from IR Site 21 soil gas probes during the December 2013 event. This event was originally scheduled for September 2013 but could not be completed then since the SAP was not approved until December 2013 (Trevet 2013). The soil gas samples from IR Site 21 were analyzed for VOCs, fixed gasses (oxygen, methane, carbon dioxide, and helium), and hydrogen sulfide. VOCs were analyzed as the chemicals of concern. Fixed gasses and hydrogen sulfide were analyzed to evaluate natural attenuation processes. Helium was the leak-check gas used in the sampling shroud.

The following subsections discuss analytical results for VOCs and natural attenuation parameters at IR Site 21.

7.3.1.1 VOCs

VOC results for IR Site 21 are summarized in Figure 19 and Table 16. During the December 2013 sampling event, VOCs were reported in all five of the soil gas probes sampled. Analytical results indicated reportable concentrations of the following compounds: 1,1,1-trichloroethane, carbon tetrachloride, chloroform, cis-1,2-DCE, PCE, TCE, and trichlorotrifluoroethane (Table 15). Of these results, only chloroform, PCE, and TCE exceeded the residential SSSLs for soil gas. Chloroform, with an SSSL of 4.2 µg/m^3, was reported in three of the five probes at a maximum of 240 µg/m^3. PCE, with an SSSL of 16 µg/m^3, was reported in five probes at a maximum of 8,900 µg/m$^{3.}$ TCE, with an SSSL of 20 µg/m^3, was reported in five probes at a maximum of 1,700 µg/m^3. These results were consistent with historical results from 2010 through 2012 (Shaw 2012b) with the following one exception: chloroform concentrations

reported from probes 21-SG-27, 21-SG-30, and 21-SG-31 were higher than historical results from 2012.

7.3.1.2 Natural Attenuation Parameters

Results for fixed gasses and hydrogen sulfide are presented in Table 17.

Oxygen concentrations reported in soil gas samples ranged from 20.0 % v/v to 21.1 % v/v, which are similar to atmospheric values. Carbon dioxide concentrations ranged from 0.205 % v/v to 1.02 % v/v, which is elevated compared to atmospheric values. Methane and hydrogen sulfide were not reported in the soil gas samples. Fixed-gas results from the soil gas probes indicate a high oxygen and low methane environment in the vadose zone (Table 15). These results indicate that the vadose zone is aerobic in contrast to the saturated zone, which is anaerobic.

Helium results indicated ambient air leakage into the sampling apparatus and surface seal ranging from nondetectable (probes 21-SG-05, 21-SG-27, and 21-SG-30) to approximately 1.1 % v/v (probe 21-SG-04). The ambient air leakage rate was within the 5-percent leakage criterion specified in the SAP (Trevet 2013), indicating that the analytical results were of acceptable quality.

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Section 8 Summary, Conclusions, and Recommendations

The following sections present a summary of the 2013 monitoring events and results and recommendations based on the findings.

8.1 Summary and Conclusions

Trevet performed four rounds of groundwater monitoring and one round of soil gas sampling during the 2013 monitoring period at NAVSTA TI at IR Sites 6, 12, 21, and 24. The first three monitoring events were performed under previous SAPs (Trevet 2012a and 2012b) and the last event under the current SAP (Trevet 2013). The timing of the monitoring events changed during 2013 due to the new SAP. Monitoring at IR Site 6 was performed on a quarterly basis and included gauging three wells and sampling two. Monitoring at IR Site 12 was performed once and included gauging 25 wells and sampling seven. Monitoring at IR Site 21 was performed twice and included gauging and sampling 37 wells during the March 2013 event and gauging and sampling 3 wells and sampling five soil gas probes during the December 2013 event. Monitoring at IR Site 24 was performed twice and included gauging and sampling 63 wells during the March 2013 event and 38 wells during the December 2013 event. Minor variances from the SAPs occurred due to unanticipated conditions but did not reduce the effectiveness of the groundwater monitoring program.

8.1.1 Summary of Monitoring Results for IR Site 6

The following summarizes the results of groundwater monitoring at IR Site 6 during the 2013 monitoring events:

- The two monitoring wells at IR Site 6 were in good condition and did not require significant maintenance.
- Quarterly groundwater monitoring of wells 06-MW25 and 06-MW26 has been completed for 1 year (four events).
- Depth to groundwater ranged from 4.67 to 6.30 feet below TOC. Groundwater elevations and hydraulic gradient could not be calculated due to the lack of TOC elevations for the two monitoring wells. Historically, groundwater flow has been to the north or northeast toward the shore.
- Groundwater analytical results indicated reportable concentrations of TPHg, TPHd, BTEX, carbon disulfide, cis-1,2-DCE, isopropyl benzene, TCE and naphthalene. However, only ethylbenzene exceeded the toxicity screening criterion. Ethylbenzene concentrations above the toxicity screening criterion were only reported in well 06-MW25. Concentrations of petroleum-related compounds generally decreased during the monitoring period.

- Natural attenuation parameter results indicated anaerobic conditions, consistent with historical results. Anaerobic conditions are generally indicative of slow natural attenuation of petroleum hydrocarbons.

8.1.2 Summary of Monitoring Results for IR Site 12

The following summarizes the results of groundwater monitoring at IR Site 12 during the 2013 monitoring event:

- Of the 25 monitoring wells included in the monitoring program at IR Site 12, 14 were in good condition and did not require significant maintenance. Well 12-MW09 was likely covered by a storage trailer and could not be accessed. Well 12-MW28 has been severely damaged and is likely unusable. Nine other wells require maintenance.
- Groundwater flow at IR Site 12 was generally directed radially toward the shore. In the northern portion of the site, groundwater flow was to the north with an average gradient ranging from 0.001 to 0.006 ft/ft. In the western portion of the site, groundwater flow was to the west with an average gradient of 0.002 ft/ft. These results were consistent with historical data.
- At SWDA Westside, barium, cobalt, and nickel were the only analytes that exceeded the applicable screening criteria. Concentrations of cobalt and nickel were only slightly in excess of the screening criteria. The concentrations of the three metals were consistent with historical results. TPHd, TPHmo, and VOCs were reported in groundwater at SWDA Westside but the concentrations were less than the screening criteria and were consistent with historical results. Ra-226 was not reported in groundwater.
- At the 175 Gateview Avenue Petroleum Area, arsenic and barium were the only analytes that exceeded the applicable screening criteria. Concentrations of these elements were consistent with historical results. TPHg and TPHd were reported in groundwater but the concentrations were less than the screening criteria. M-K tests indicated stable to decreasing trends for arsenic, barium, and TPH. Ra-226 was not reported in groundwater. Natural attenuation parameter results indicated anaerobic/reducing conditions, which likely influenced dissolved arsenic concentrations in the area.

8.1.3 Summary of Monitoring Results for IR Site 21

The following summarizes the results of groundwater and soil gas monitoring at IR Site 21 during the 2013 monitoring events:

- All three of the monitoring wells included in the monitoring program require maintenance. There are 67 wells at IR Site 21 that are not included in the monitoring program and many of those are in disrepair.
- During the March 2013 monitoring event, groundwater flowed to the east and southeast near Building 3 with an average gradient ranging from 0.002 to 0.005 ft/ft. Closer to the shore the gradient reversed, flowing to the west and northwest with an average gradient ranging from 0.005 to 0.010 ft/ft. The cause of the hydrostatic low and reversal away from the shore is unknown but may be related to tidal influence. Data collected during the December 2013 event suggested a groundwater flow to the south, which was inconsistent with historical results. However, the December event included only three wells that were closely spaced and the results were likely not representative of the groundwater flow direction across the site.
- Groundwater analytical results indicated that VC was the only analyte that exceeded the project remediation goal and the risk-based concentration. VC concentrations were generally consistent with historical results. M-K tests indicated stable or decreasing trends for VOC concentrations in most wells. An increasing trend was indicated for VC in well 21-IP07. However, concentrations of VC in 21-IP07 appear to have stabilized or are decreasing based on data from 2012 and 2013. The groundwater monitoring data do not indicate long-term increasing COC trends and demonstrate that the remedy is performing in accordance with the Final ROD.
- Soil gas analytical results indicated that chloroform, PCE, and TCE exceeded the residential SSSLs. These results were consistent with historical results from 2010 through 2012 except for chloroform, which was higher in three of the soil gas probes. Based on the similarity between the recent and historical soil gas results, the potential human health risk indicated by recent data would likely be similar to the baseline health risk evaluated in 2012 (Shaw 2012b).
- Dissolved gasses results indicated anaerobic conditions with active reductive dechlorination in the saturated zone, which is favorable for the natural attenuation of site contaminants. The presence of PCE and TCE daughter products such as DCE, VC, as well as ethane and ethene, also indicate active reductive dechlorination of site contaminants. Fixed gas results from soil gas samples indicated that the vadose zone was relatively aerobic in contrast to the anaerobic conditions in the saturated zone. Since most processes that act to reduce site contaminant concentrations occur in an aqueous environment, the relatively aerobic vadose zone likely does not interfere with the breakdown of site contaminants.

8.1.4 Summary of Monitoring Results for IR Site 24

The following summarizes the results of groundwater monitoring at IR Site 24 during the 2013 monitoring events:

- Of the 38 monitoring wells included in the monitoring program at IR Site 24, three were in good condition and did not require significant maintenance. Thirty-five other wells require maintenance. There are 206 wells at IR Site 24 that are not included in the monitoring program and many of those are in disrepair.
- During the March 2013 event, groundwater flow was to the north to northeast with an average gradient ranging from 0.002 to 0.010 ft/ft. During the December 2013 event, groundwater flow was to the northeast to east with an average gradient ranging from 0.004 to 0.016 ft/ft. These results were consistent with historical data.
- Groundwater analytical results indicated that TCE, cis-1,2-DCE, and VC exceeded project remediation goals. Project remediation goal exceedances were reported in wells 24-EW11, 24-TW-11, 24-TW-47, and 24-TW-48, consistent with historical results. M-K tests indicated stable or decreasing trends for VOC concentrations in most wells. The following wells indicated an increasing trend: 24-TW-48 for PCE; 24-TW-37 and 24-TW-41 for cis-1,2-DCE and VC; 24-EW11 and 24-TW-14 for VC.
- Natural attenuation parameter results indicated anaerobic conditions with active reductive dechlorination in the saturated zone, which is favorable for the natural attenuation of site contaminants. The presence of PCE and TCE daughter products such as DCE, VC, as well as ethane and ethene, also indicate active reductive dechlorination of site contaminants.

8.2 Recommendations

Trevet presents the following recommendations based on the above findings:

- The quarterly groundwater monitoring schedule at IR Site 6 should be reduced to semiannual since the wells have been monitored quarterly for 1 year and sufficient data have been collected indicating generally stable conditions. Semiannual groundwater monitoring at IR Site 6 should coincide with semiannual monitoring at IR Sites 12, 21, and 24.
- Anaerobic conditions in groundwater at IR Sites 6, 12, 21, and 24 have been well documented. Sample collection for natural attenuation parameter monitoring should be eliminated from future monitoring because the conditions necessary for natural attenuation of contaminants have already been shown to be present. Additionally, natural attenuation parameter monitoring is not necessary at IR Site 21 since it is not

part of the selected remedy (institutional controls) as presented in the Final ROD (DON 2013a).

- Many wells included in the monitoring program at IR Sites 12, 21, and 24 are in disrepair. These wells could be subject to unauthorized intrusion or damage, which would render future data from them suspect. A number of the improperly completed wells are tripping hazards in their current state. The deficient wells included in the monitoring program should be repaired. Wells not included in the monitoring program are in similar disrepair and should be evaluated for proper destruction. A comprehensive evaluation should be completed for all wells at each site to determine their status and need for maintenance. Monitoring wells deemed unnecessary for monitoring purposes will be recommended for destruction. The BCT will be given the opportunity to review and comment on the recommendations.
- Soil gas monitoring at IR Site 21 between 2010 and 2013 has indicated stable concentrations for most VOCs. While not identified as a COC, chloroform concentrations from soil gas probes located inside Building 3 (21-SG-27, 21-SG-30, and 21-SG-31) increased to above the SSSL during the 2013 monitoring period. One additional year (two semiannual soil gas monitoring events) is recommended to provide additional data to evaluate COC concentration trends.

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Section 9 References

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Figures

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Figure 2. Site Location Map
Figure 3. IR Site 6 Groundwater Monitoring Locations
Figure 4. IR Site 12 Groundwater Monitoring Locations
Figure 5. IR Site 21 Groundwater and Soil Gas Monitoring Locations
Figure 6. IR Site 24 Groundwater Monitoring Locations
Figure 7. Treasure Island Planned Land Use
Figure 8. Groundwater Elevations IR Site 12, June 24, 2013
Figure 9. Groundwater Elevations IR Site 21, December 9, 2013
Figure 10. Groundwater Elevations IR Site 24, December 10, 2013
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Figure 14. PCE in Groundwater, IR Site 24, December 2013
Figure 15. TCE in Groundwater, IR Site 24, December 2013
Figure 16. Cis-1,2-DCE in Groundwater, IR Site 24, December 2013
Figure 17. Trans-1,2-DCE in Groundwater, IR Site 24, December 2013
Figure 18. Vinyl Chloride in Groundwater, IR Site 24, December 2013
Figure 19. PCE and TCE in Soil Gas, IR Site 21, December 2013

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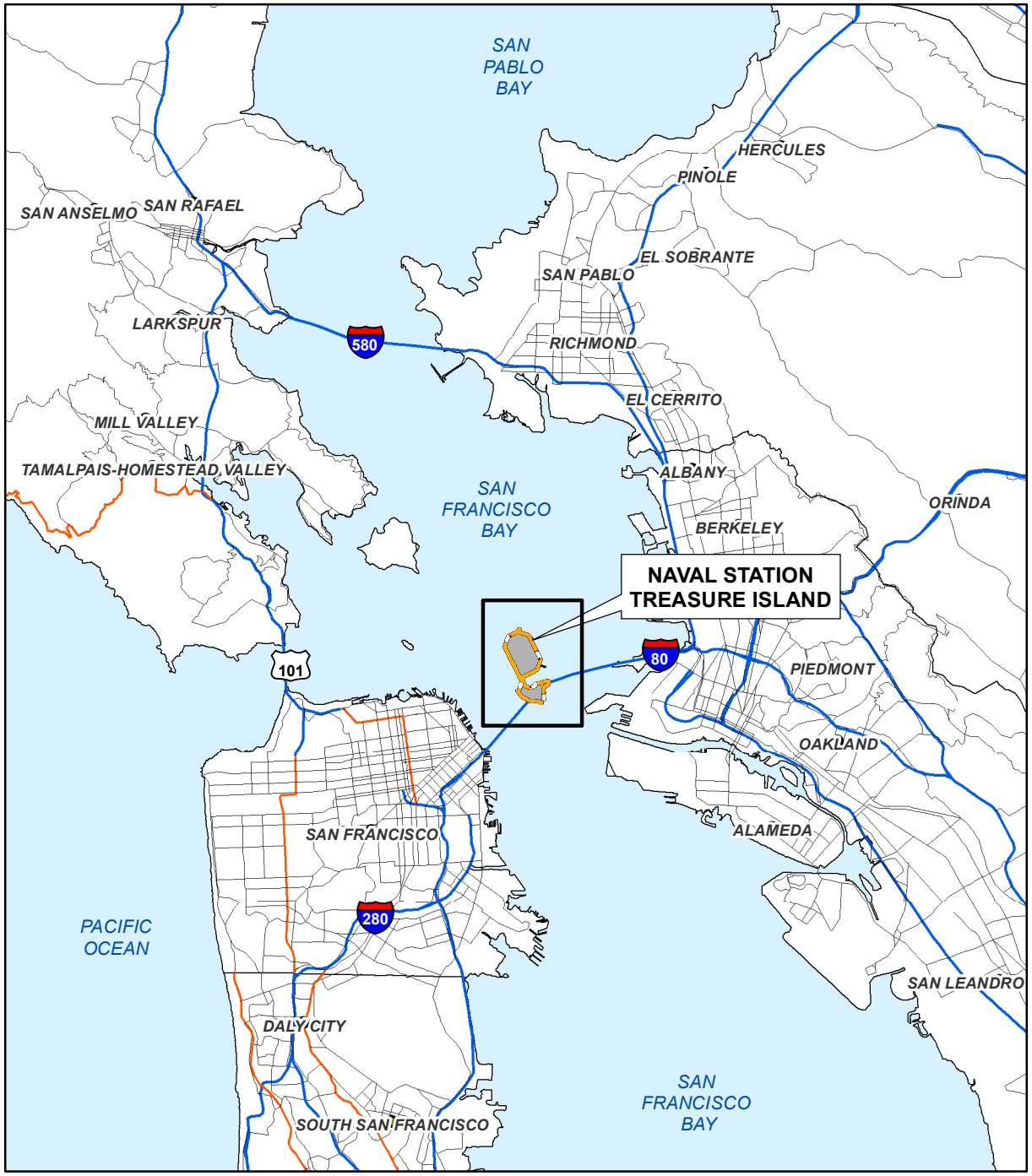

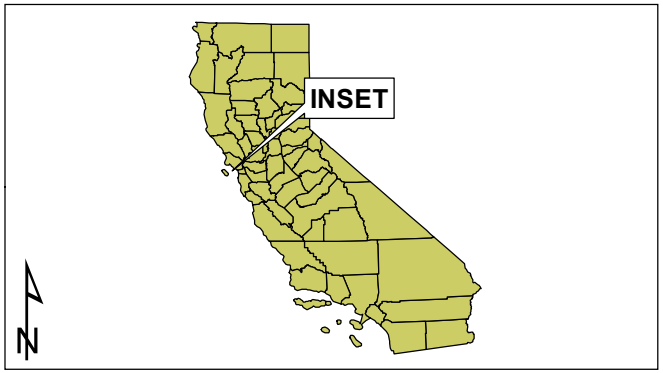

LEGEND

NAVAL STATION TREASURE ISLAND

SOURCE:
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI) USA SPATIAL FEATURE CLASSES

N

GRAPHIC SCALE

0 2 4 8

(IN MILES)
1 INCH = 4 MILES

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NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC Naval Facilities Engineering Command NAVFAC SOUTHWEST

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 1

INSTALLATION LOCATION MAP

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig1_6-12-21-24_Annual_SitePlan_12-14.mxd

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LEGEND

- ROAD CURB
- BUILDING/STRUCTURE
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- IR SITE 21 BOUNDARY
- IR SITE 24 BOUNDARY

SOURCE:
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI) USA SPATIAL FEATURE CLASSES

N

GRAPHIC SCALE

0 750 1,500 3,000

(IN FEET)
1 INCH = 1,500 FEET

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 2

SITE LOCATION MAP

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

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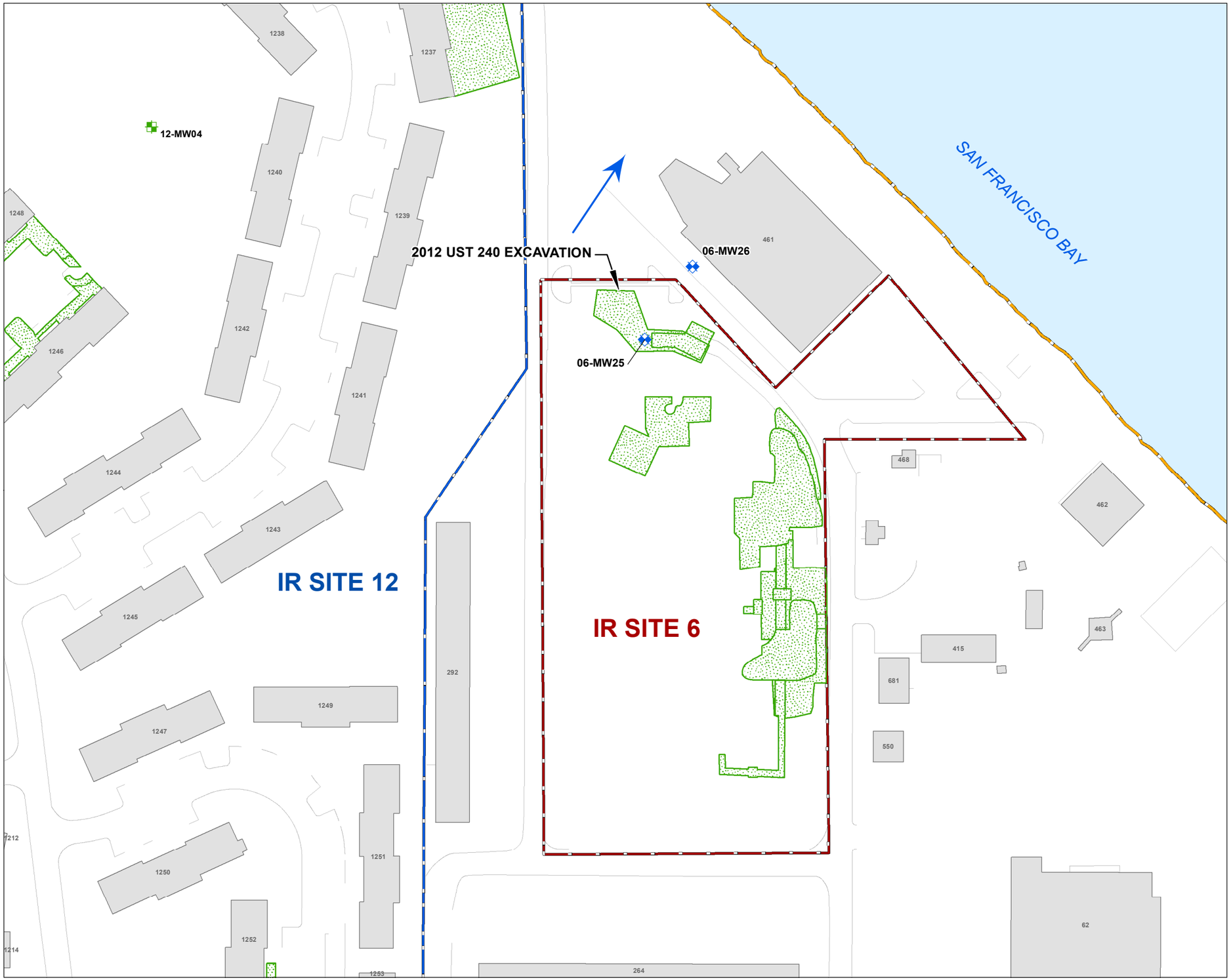

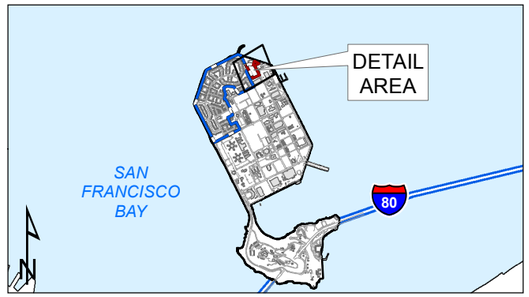

LEGEND

- MONITORING WELL GAUGED AND SAMPLED QUARTERLY
- MONITORING WELL GAUGED QUARTERLY (NOT SAMPLED)
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- BUILDING
- EXCAVATION AREA
- GENERAL GROUNDWATER FLOW DIRECTION

NOTES:
UST - UNDERGROUND STORAGE TANK

GRAPHIC SCALE
0 50 100 200
(IN FEET)
1 INCH = 100 FEET

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SAN FRANCISCO, CALIFORNIA

FIGURE 3

IR SITE 6 GROUNDWATER MONITORING LOCATIONS

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

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Date: 1/18/2015

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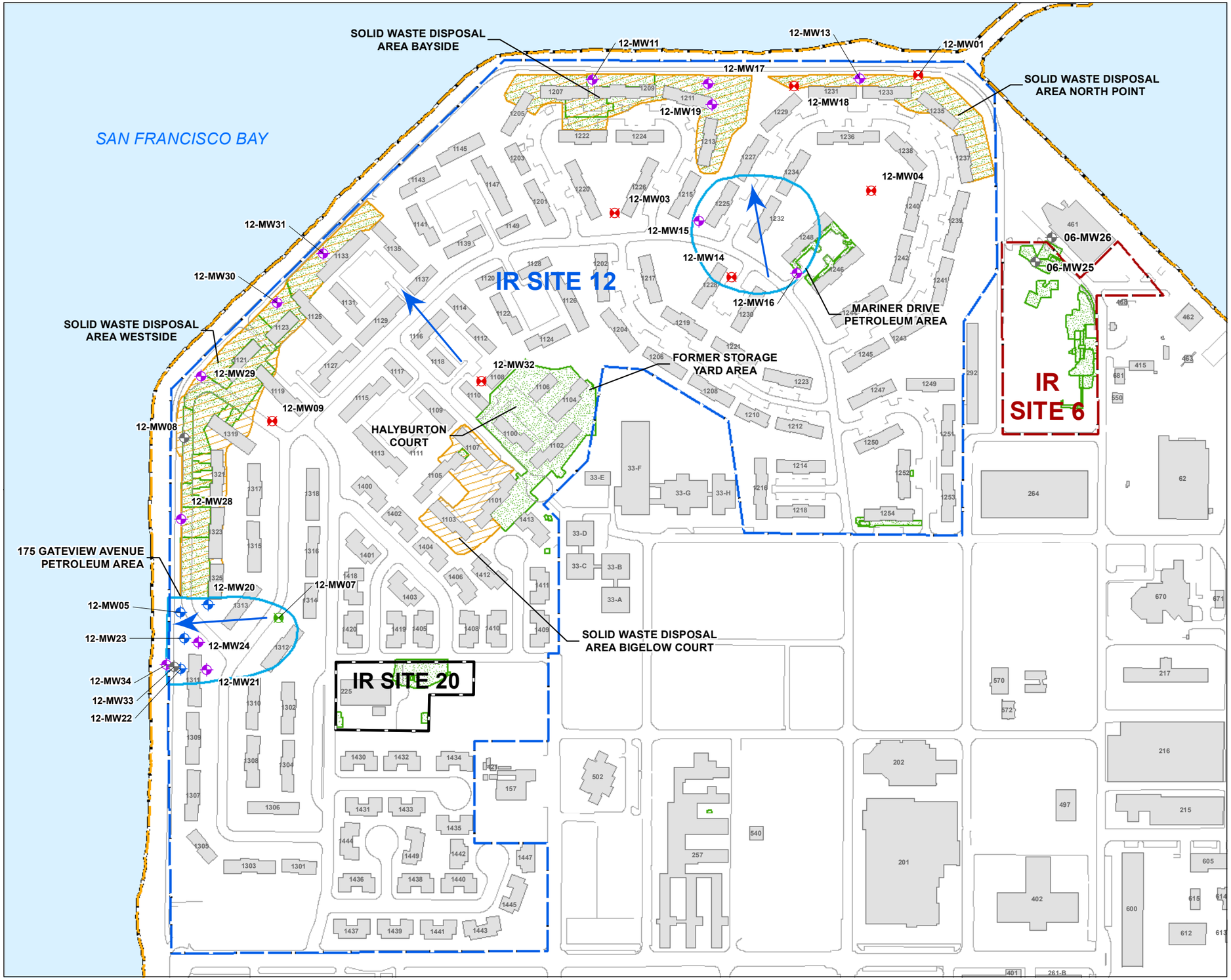

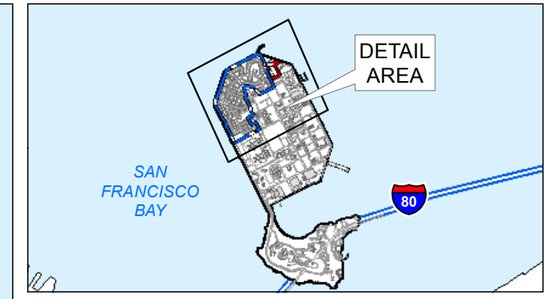

LEGEND

- MONITORING WELL GAUGED ANNUALLY
- MONITORING WELL SAMPLED ANNUALLY
- MONITORING WELL GAUGED SEMIANNUALLY
- MONITORING WELLS SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE12 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- IR SITE 20 BOUNDARY
- BUILDING
- SOLID WASTE DISPOSAL AREA
- EXCAVATION AREA
- PETROLEUM AREA BOUNDARY
- GENERAL GROUNDWATER FLOW DIRECTION

NOTES:
SOLID WASTE DISPOSAL AREA 1207/1209 SHOWN IS EXCAVATION FROM 1991. MARINER DRIVE EXCAVATION AREA SHOWN IS EXCAVATION FROM 2001.

GRAPHIC SCALE
0 150 300 600
(IN FEET)
1 INCH = 300 FEET

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FIGURE 4

IR SITE 12 GROUNDWATER MONITORING LOCATIONS

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

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Date: 1/21/2015

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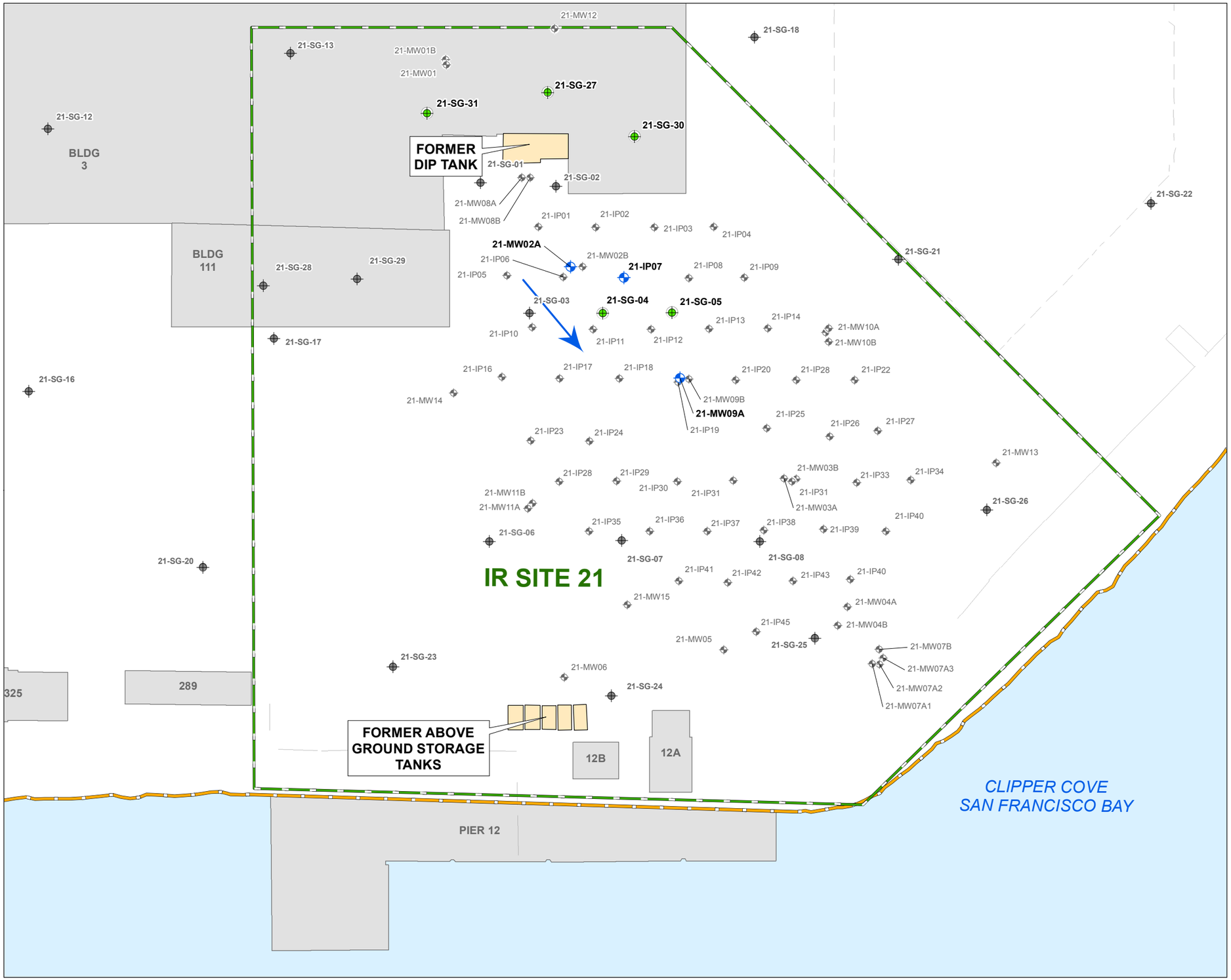

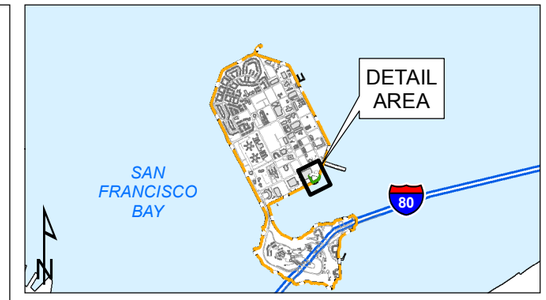

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 21 MONITORING PROGRAM
- SOIL GAS PROBE SAMPLED SEMIANNUALLY
- SOIL GAS PROBE NOT INCUDED IN IR SITE 21 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 21 BOUNDARY
- BUILDING/STRUCTURE
- GENERAL GROUNDWATER FLOW DIRECTION

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 INCH = 40 FEET

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 5

IR SITE 21 PROPOSED GROUNDWATER AND SOIL GAS MONITORING LOCATIONS

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig5_Annual_Site21_12-14.mxd

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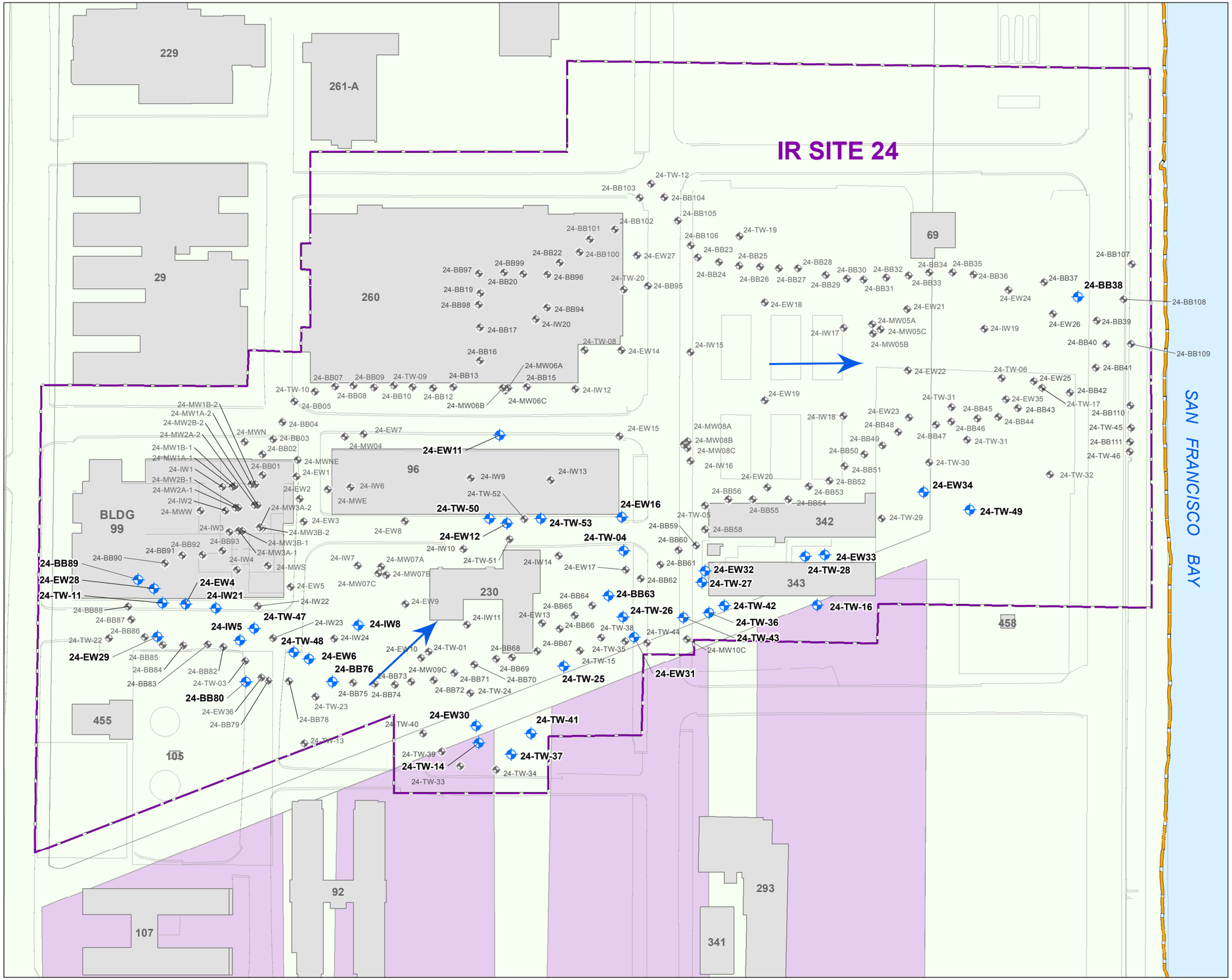

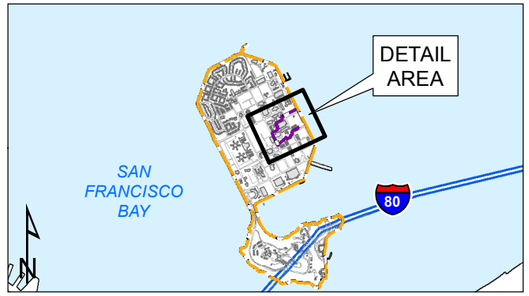

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELL NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- PLANNED FUTURE RESIDENTIAL LAND USE
- PLANNED FUTURE OPEN-SPACE LAND USE
- PLANNED FUTURE PUBLIC (FEDERAL) LAND USE
- GENERAL GROUNDWATER FLOW DIRECTION

NOTES:
PLANNED FUTURE LAND USE BASED ON APRIL 2011 TI/YBI REDEVELOPMENT PROJECT CONCEPTUAL LAND PLAN, TREASURE ISLAND DEVELOPMENT AGENCY

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

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SAN DIEGO, CALIFORNIA

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SAN FRANCISCO, CALIFORNIA

FIGURE 6

IR SITE 24 GROUNDWATER MONITORING LOCATIONS

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig6_Annual_Site24_12-14.mxd

Date: 1/18/2015

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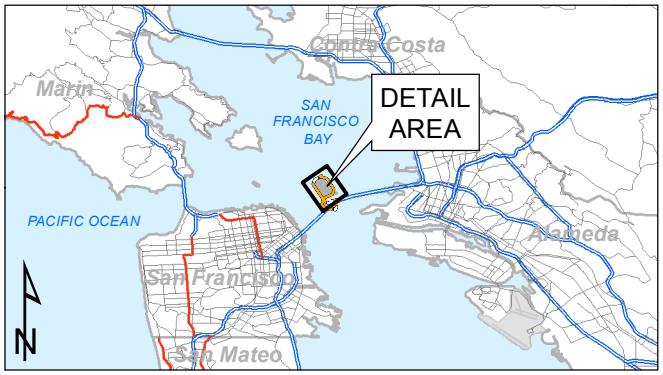

LEGEND

- ROAD CURB
- BUILDING/STRUCTURE
- NAVAL STATION TREASURE ISLAND BOUNDARY
- PLANNED FUTURE RESIDENTIAL LAND USE
- PLANNED FUTURE OPEN-SPACE LAND USE
- PLANNED FUTURE PUBLIC (FEDERAL) LAND USE
- MIXED USE/PUBLIC SERVICES

GRAPHIC SCALE

0 500 1,000 2,000

(IN FEET)
1 INCH = 1000 FEET

SOURCE:
PLANNED FUTURE LAND USE BASED ON APRIL 2011 TI/YBI REDEVELOPMENT PROJECT CONCEPTUAL LAND PLAN, TREASURE ISLAND DEVELOPMENT AGENCY

ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI) USA SPATIAL FEATURE CLASSES

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FIGURE 7

TREASURE ISLAND PLANNED LAND USE

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig7_6-12-21-24_Landuse_12-14.mxd

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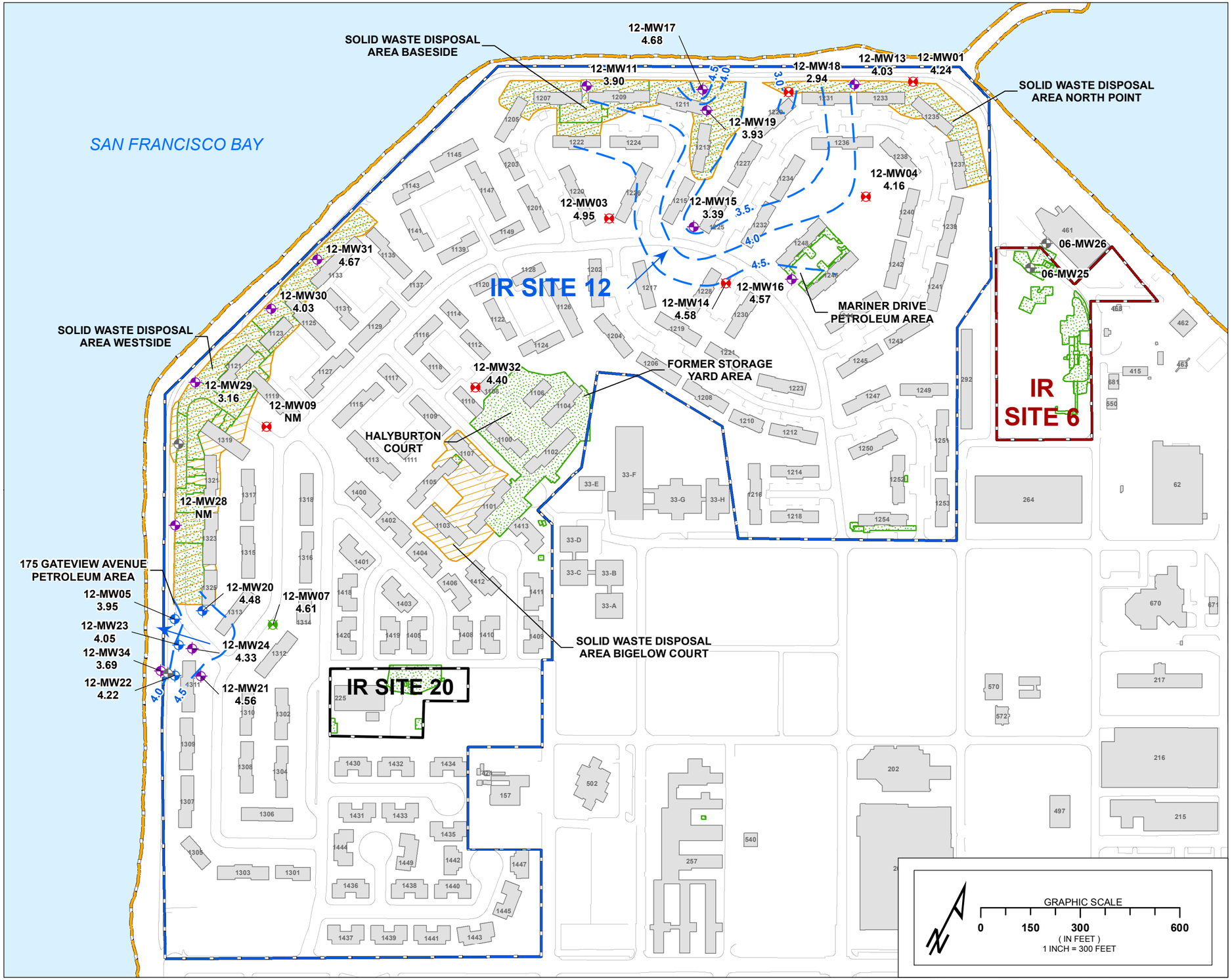

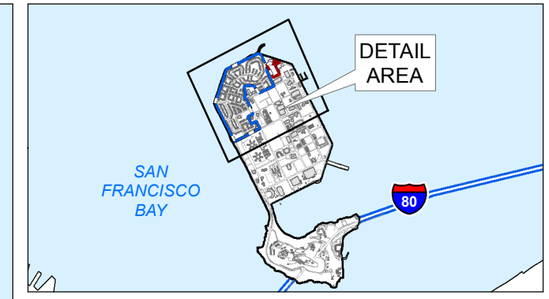

LEGEND

- MONITORING WELL GAUGED ANNUALLY
- MONITORING WELL SAMPLED ANNUALLY
- MONITORING WELL GAUGED SEMIANNUALLY
- MONITORING WELLS SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE12 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- IR SITE 20 BOUNDARY
- BUILDING
- SOLID WASTE DISPOSAL AREA
- EXCAVATION AREA
- 6.5 GROUNDWATER ELEVATION CONTOUR (FEET AMSL)
- GENERAL GROUNDWATER FLOW DIRECTION
- WELL ID: 12-MW16
- GROUNDWATER ELEVATION (FEET AMSL): 4.57

NOTES:
AMSL - ABOVE MEAN SEA LEVEL
NM - NOT MEASURED
SOLID WASTE DISPOSAL AREA 1207/1209 SHOWN IS EXCAVATION FROM 1991. MARINER DRIVE EXCAVATION AREA SHOWN IS EXCAVATION FROM 2001.

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FIGURE 8

GROUNDWATER ELEVATIONS
IR SITE 12, JUNE 24, 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig8_Annual_Site12_GW_Elev_12-14.mxd
Date: 1/18/2015

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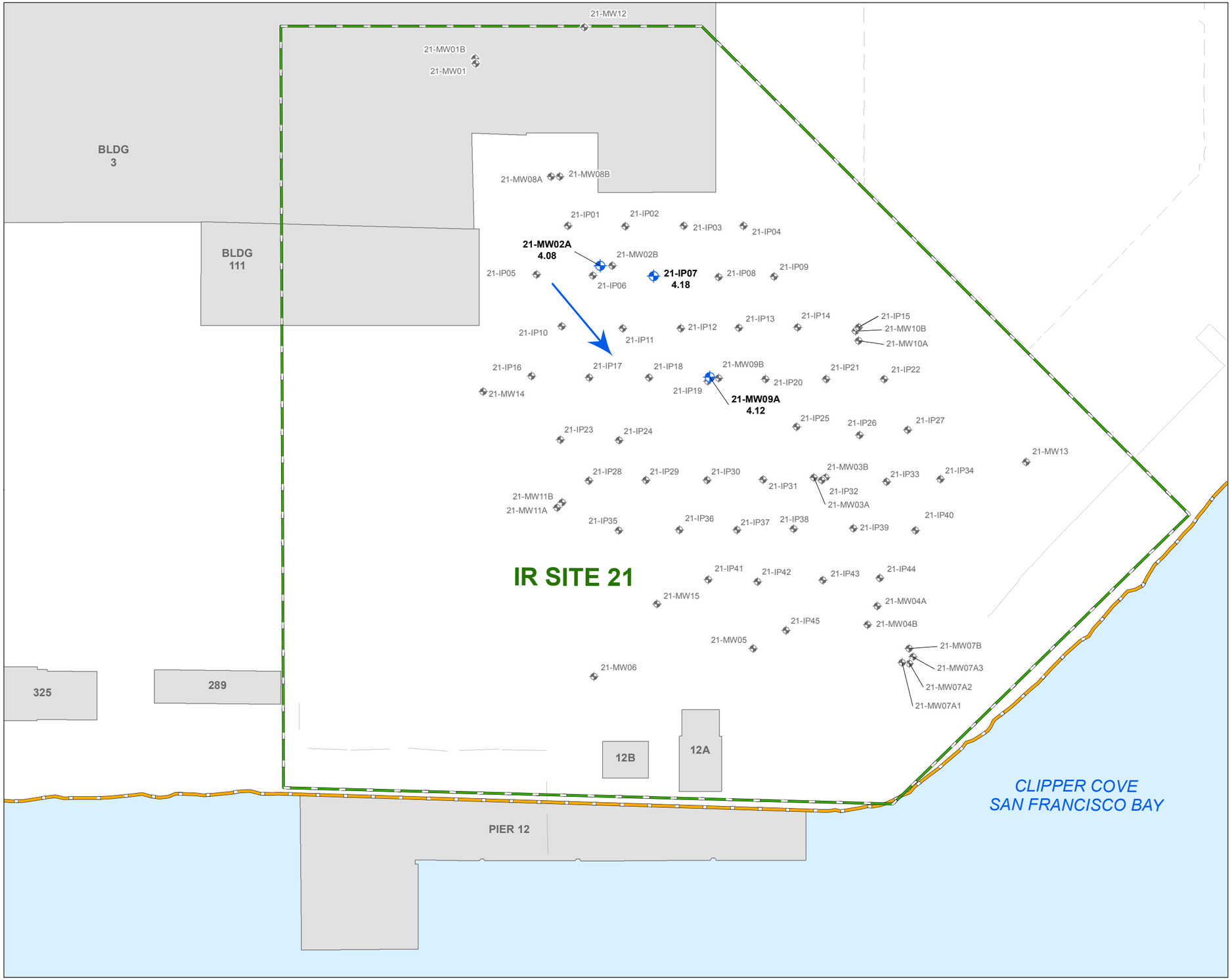

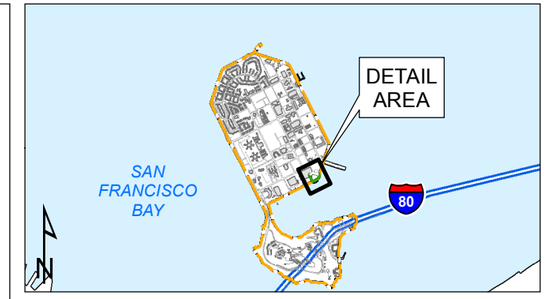

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 21 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 21 BOUNDARY
- BUILDING/STRUCTURE
- HISTORICAL GROUNDWATER FLOW DIRECTION

WELL ID
21-IP07
4.18
GROUNDWATER ELEVATION (FEET AMSL)

NOTES:
AMSL - ABOVE MEAN SEA LEVEL

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

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FIGURE 9

GROUNDWATER ELEVATIONS
IR SITE 21, DECEMBER 9, 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig9_Annual_Site21_GW_Elev_12-14.mxd

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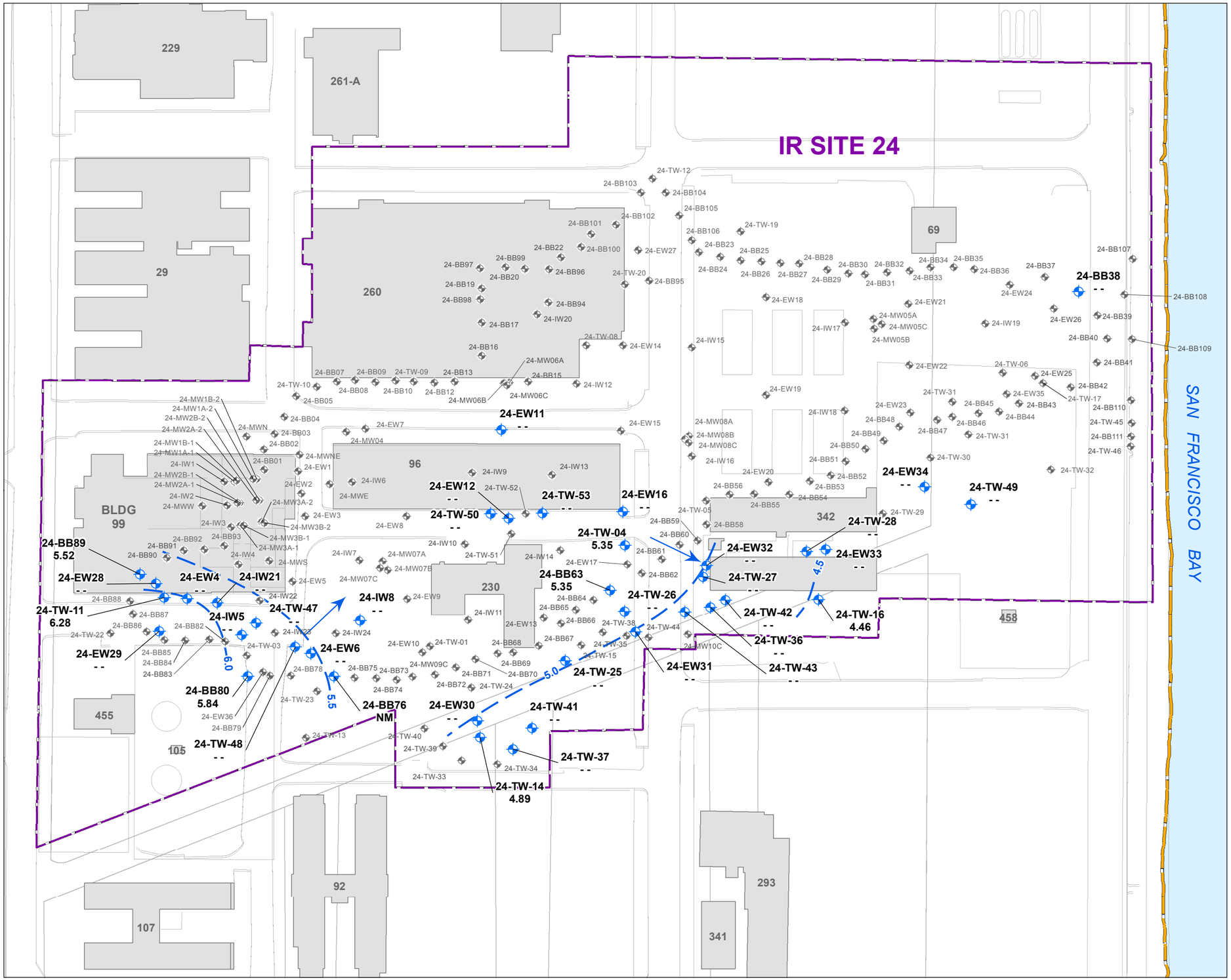

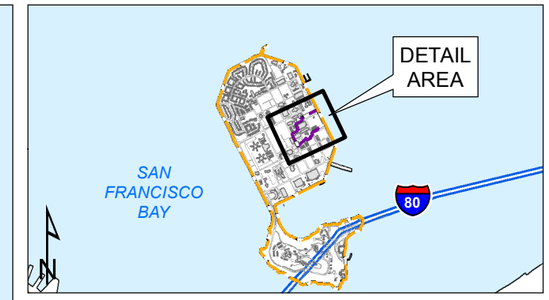

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- -6.0- GROUNDWATER ELEVATION CONTOUR (FEET AMSL)
- GENERAL GROUNDWATER FLOW DIRECTION

WELL ID
24-TW-04
5.35
GROUNDWATER ELEVATION (FEET AMSL)

NOTES:
-- WELL ELEVATION NOT AVAILABLE
AMSL - ABOVE MEAN SEA LEVEL
NM - NOT MEASURED

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 10

GROUNDWATER ELEVATIONS
IR SITE 24, DECEMBER 10, 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig10_Annual_Site24_GW_Elev_12-14.mxd

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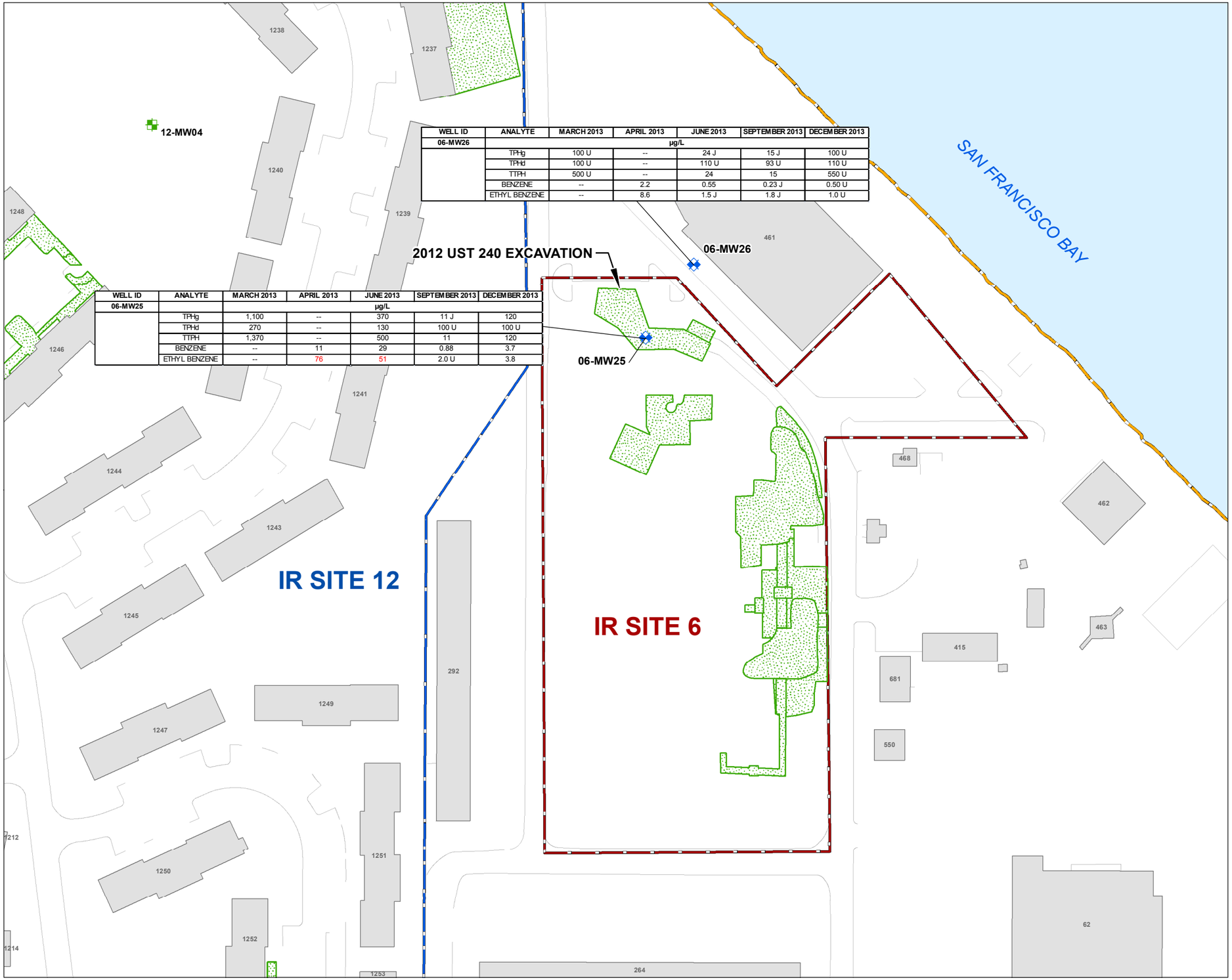
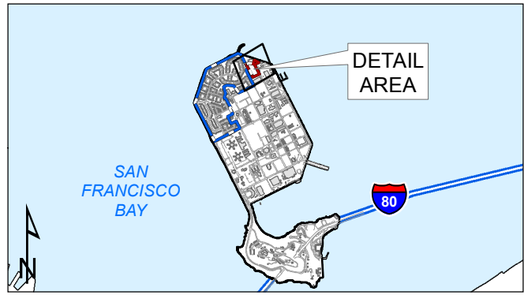


WELL ID	ANALYTE	MARCH 2013	APRIL 2013	JUNE 2013	SEPTEMBER 2013	DECEMBER 2013
06-MW26		µg/L				
	TPHg	100 U	--	24 J	15 J	100 U
	TPHd	100 U	--	110 U	93 U	110 U
	TTPH	500 U	--	24	15	550 U
	BENZENE	--	2.2	0.55	0.23 J	0.50 U
	ETHYL BENZENE	--	8.6	1.5 J	1.8 J	1.0 U

WELL ID	ANALYTE	MARCH 2013	APRIL 2013	JUNE 2013	SEPTEMBER 2013	DECEMBER 2013
06-MW25		µg/L				
	TPHg	1,100	--	370	11 J	120
	TPHd	270	--	130	100 U	100 U
	TTPH	1,370	--	500	11	120
	BENZENE	--	11	29	0.88	3.7
	ETHYL BENZENE	--	76	51	2.0 U	3.8



LEGEND

- MONITORING WELL GAUGED AND SAMPLED QUARTERLY
- MONITORING WELL GAUGED QUARTERLY (NOT SAMPLED)
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- BUILDING
- EXCAVATION AREA

NOTES:
- - NOT ANALYZED
µg/L - MICROGRAMS PER LITER
U - NOT DETECTED
RED TEXT INDICATES CONCENTRATIONS EQUAL TO OR GREATER THAN THE SCREENING CRITERIA
TPHg - TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, (AT PURGEABLE RANGE)
TPHd - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
TTPH - TOTAL RANGE OF PETROLEUM HYDROCARBONS
UST - UNDERGROUND STORAGE TANK

GRAPHIC SCALE
0 50 100 200
(IN FEET)
1 INCH = 100 FEET

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FIGURE 11

PETROLEUM HYDROCARBONS IN GROUNDWATER IR SITE 6, MARCH 2013 THROUGH DECEMBER 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig11_Annual_Site6_TPH_12-14.mxd

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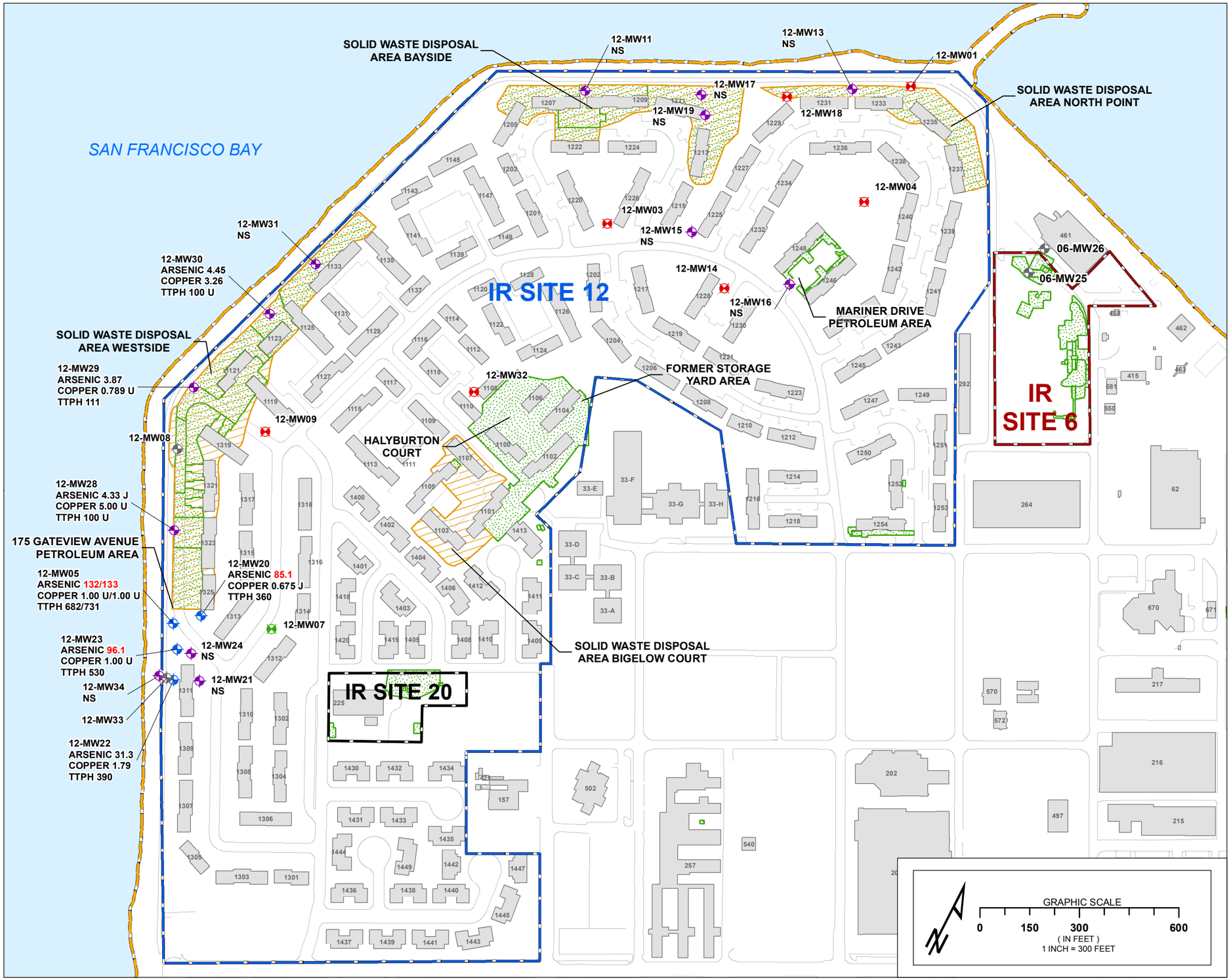

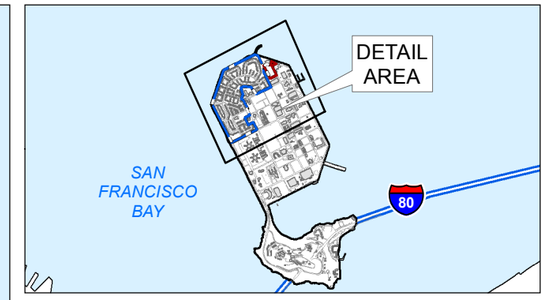

LEGEND

- MONITORING WELL GAUGED ANNUALLY*
- MONITORING WELL SAMPLED ANNUALLY*
- MONITORING WELL GAUGED SEMIANNUALLY
- MONITORING WELLS SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE12 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 6 BOUNDARY
- IR SITE 12 BOUNDARY
- IR SITE 20 BOUNDARY
- BUILDING
- SOLID WASTE DISPOSAL AREA
- EXCAVATION AREA

WELL ID
12-MW05
ARSENIC 132/133
COPPER 1.00 U/1.00 U
TTPH 682/731

ANAYLYTE — DUPLICATE SAMPLE RESULT — SAMPLE RESULT (µg/L)

NOTES:
* - 2013 ANNUAL MONITORING EVENT HAS SHIFTED TO MARCH 2014 TO SYNCHRONIZE WITH THE BASEWIDE MONITORING SCHEDULE
J - ESTIMATED CONCENTRATION
NS - WELL NOT SAMPLED
TTPH - TOTAL TOTAL PETROLEUM HYDROCARBONS (C6 TO C34)
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER
RED TEXT INDICATES CONCENTRATIONS EQUAL TO OR GREATER THAN THE SCREENING CRITERIA
SOLID WASTE DISPOSAL AREA 1207/1209 SHOWN IS EXCAVATION FROM 1991.
MARINER DRIVE EXCAVATION AREA SHOWN IS EXCAVATION FROM 2001.

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 12

TOTAL ARSENIC, COPPER, AND TTPH IN GROUNDWATER IR SITE 12, JUNE 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig12_Annual_Site12_ArsenicCopper_12-14.mxd

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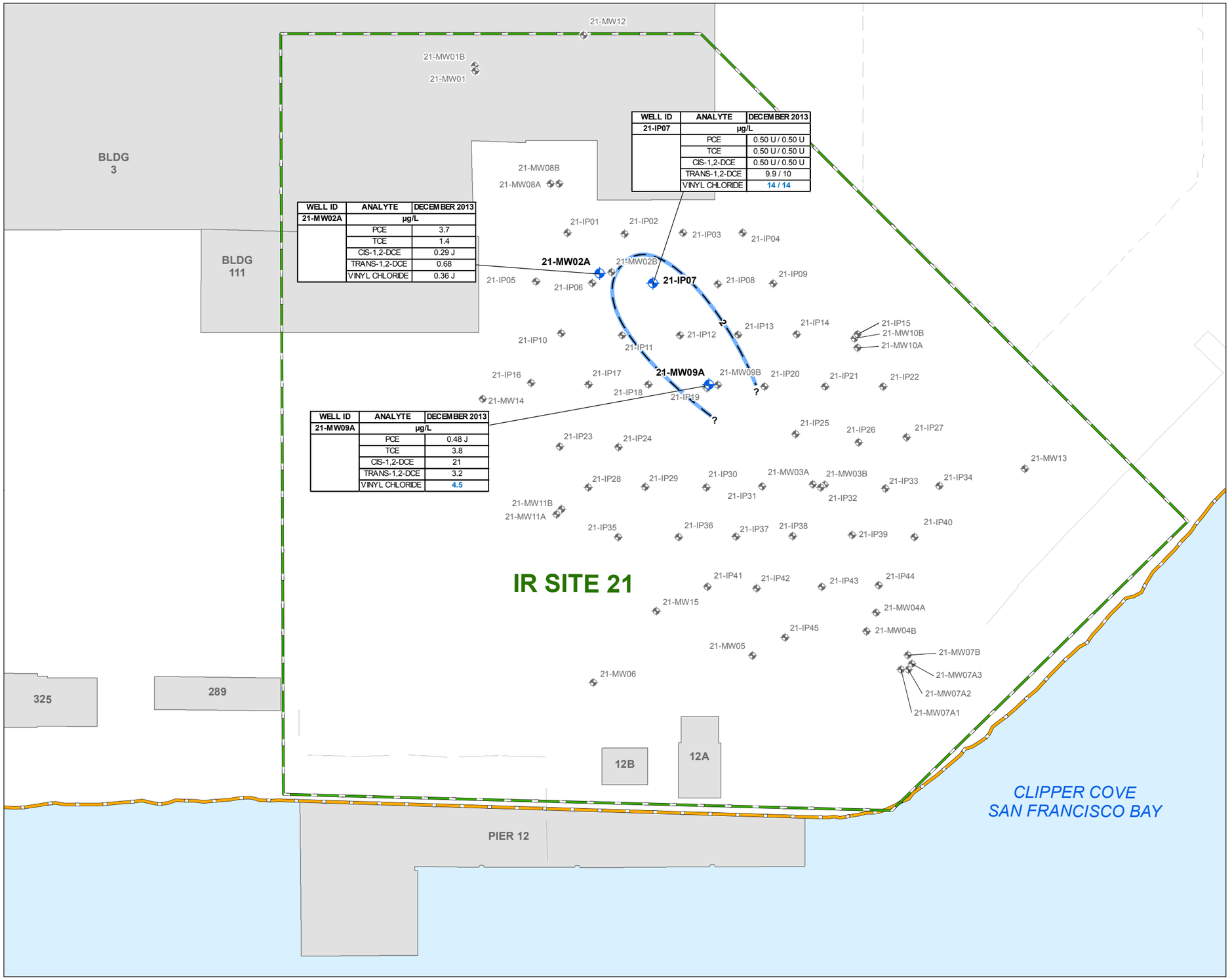
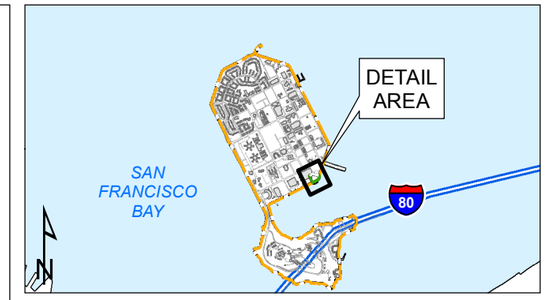


WELL ID	ANALYTE	DECEMBER 2013
21-IP07	µg/L	
	PCE	0.50 U / 0.50 U
	TCE	0.50 U / 0.50 U
	CIS-1,2-DCE	0.50 U / 0.50 U
	TRANS-1,2-DCE	9.9 / 10
	VINYL CHLORIDE	14 / 14

WELL ID	ANALYTE	DECEMBER 2013
21-MW02A	µg/L	
	PCE	3.7
	TCE	1.4
	CIS-1,2-DCE	0.29 J
	TRANS-1,2-DCE	0.68
	VINYL CHLORIDE	0.36 J

WELL ID	ANALYTE	DECEMBER 2013
21-MW09A	µg/L	
	PCE	0.48 J
	TCE	3.8
	CIS-1,2-DCE	21
	TRANS-1,2-DCE	3.2
	VINYL CHLORIDE	4.5



LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 21 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 21 BOUNDARY
- BUILDING/STRUCTURE
- VINYL CHLORIDE CONCENTRATION EXCEEDED RISK-BASED CONCENTRATION

WELL ID	ANALYTE	DECEMBER 2013
21-IP07	µg/L	
	PCE	0.50 U / 0.50 U
	TCE	0.50 U / 0.50 U
	CIS-1,2-DCE	0.50 U / 0.50 U
	TRANS-1,2-DCE	9.9 / 10
	VINYL CHLORIDE	14 / 14

RESULTS — DUPLICATE SAMPLE RESULTS

NOTES:
BLUE TEXT INDICATES CONCENTRATION EQUAL TO OR GREATER THAN THE RISK-BASED CONCENTRATION
CIS-1,2-DCE - CIS-1,2- DICHLOROETHENE
J - ESTIMATED CONCENTRATION
PCE - TETRACHLOROETHENE
TCE - TRICHLOROETHENE
TRANS-1,2-DCE - TRANS-1,2-DICHLOROETHENE
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 13

CHLORINATED ETHENES IN GROUNDWATER IR SITE 21, DECEMBER 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig13_Annual_Site21_Ethenes_12-14.mxd

Date: 1/18/2015

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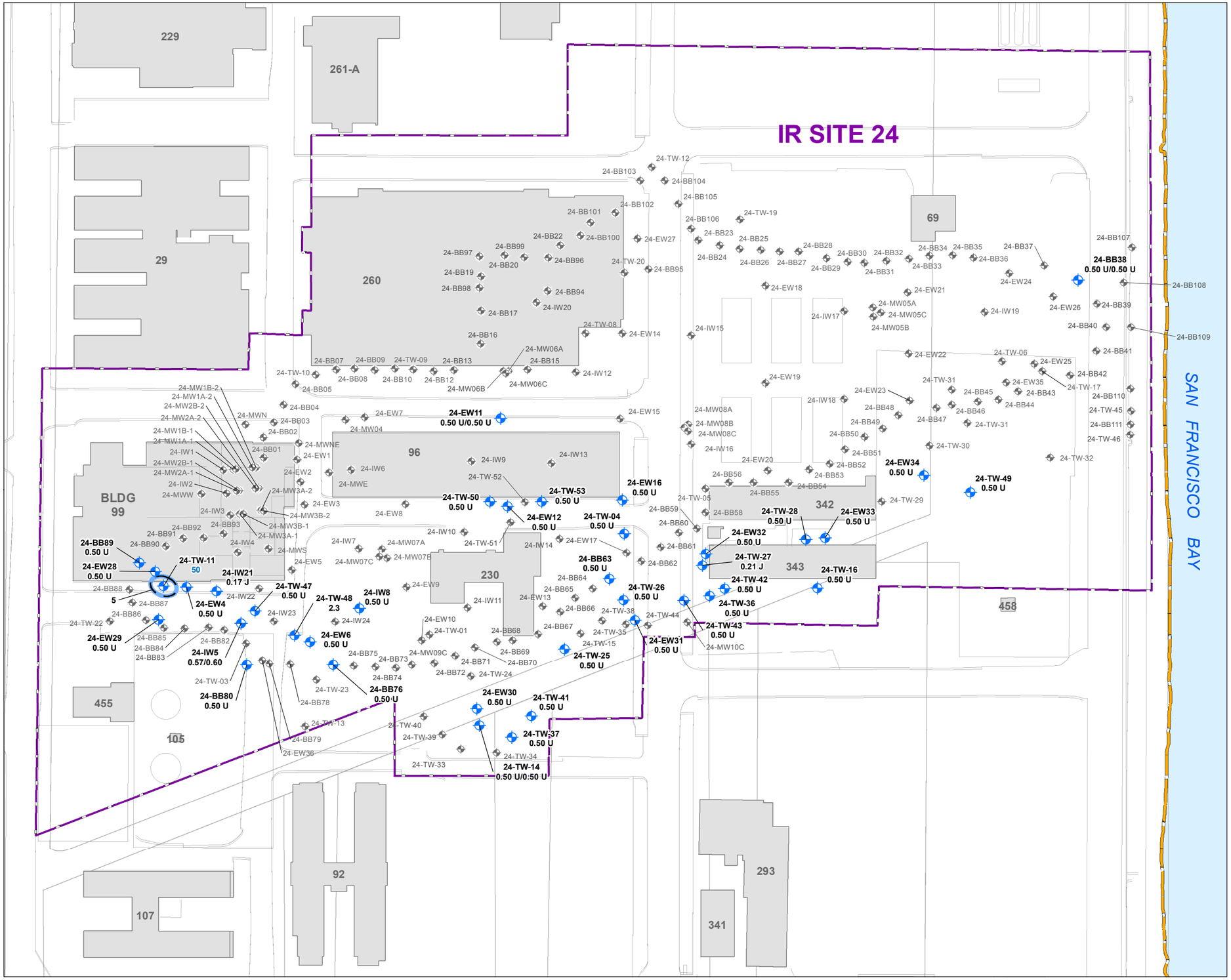

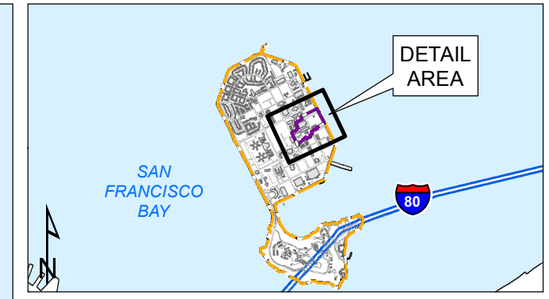

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- PCE CONCENTRATION EXCEEDED ALTERNATE PROJECT REMEDIATION GOAL (5 µg/L)

WELL ID
24-IW5
2.8/2.9
PCE (µg/L)
DUPLICATE SAMPLE RESULTS

NOTES:
BLUE VALUE EXCEEDED ALTERNATE PROJECT REMEDIATION GOAL
J - ESTIMATED CONCENTRATION
PCE - TETRACHLOROETHENE
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

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2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 14

PCE IN GROUNDWATER
IR SITE 24, DECEMBER 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig14_Annual_Site24_PCE_12-14.mxd
Date: 1/18/2015

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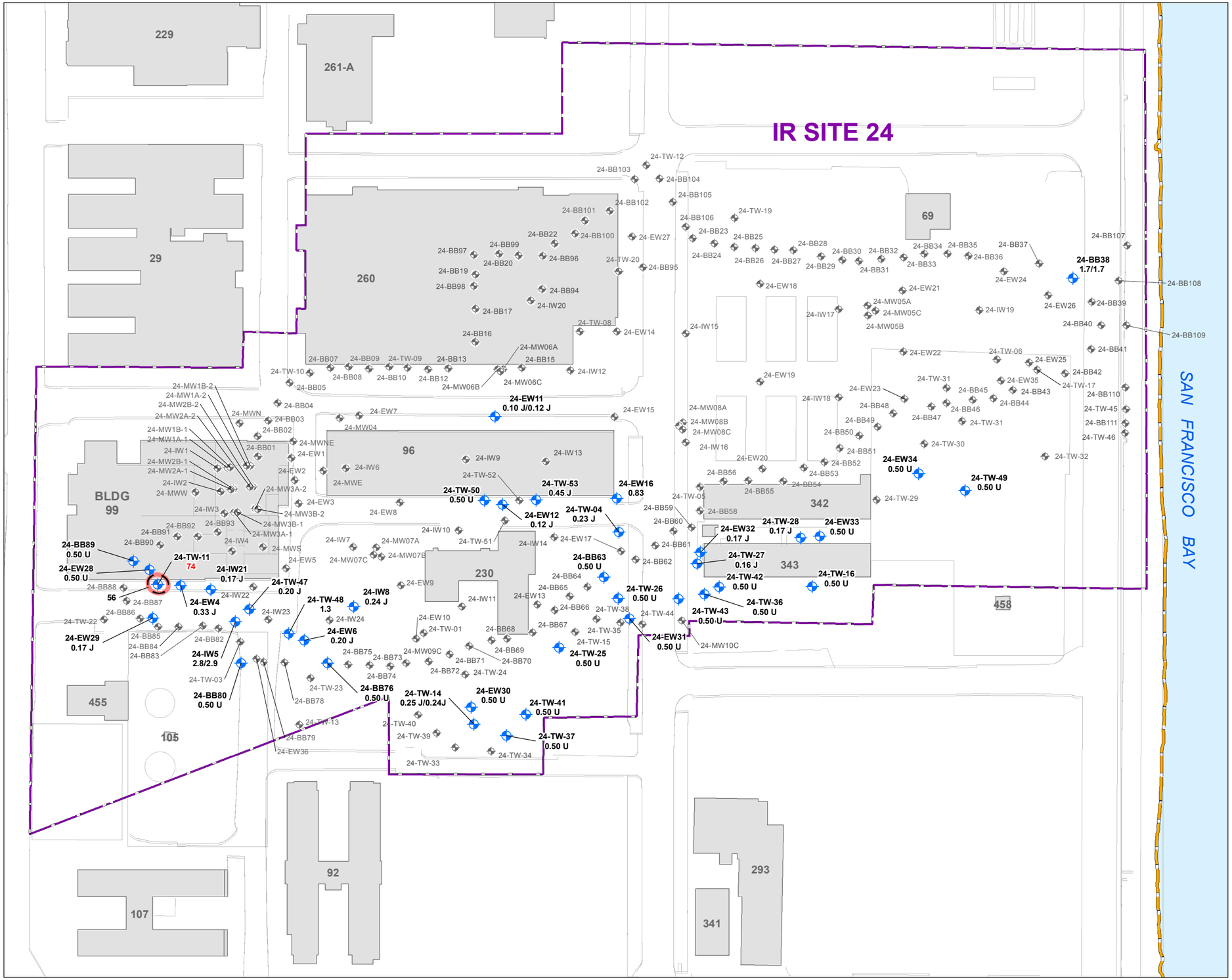

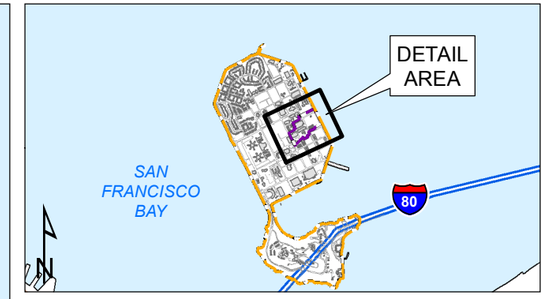

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- 56 — TCE CONCENTRATION EXCEEDED PROJECT REMEDIATION GOAL (56 µg/L)

WELL ID: 24-IW5
TCE (µg/L): 0.57
DUPLICATE SAMPLE RESULTS: 0.60

NOTES:
RED VALUE EXCEEDED PROJECT REMEDIATION GOAL
J - ESTIMATED CONCENTRATION
TCE - TROCHLOROETHENE
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

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NAVAL FACILITIES ENGINEERING COMMAND
NAVFAC Naval Facilities Engineering Command NAVFAC SOUTHWEST

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 15

TCE IN GROUNDWATER
IR SITE 24, DECEMBER 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig15_Annual_Site24_TCE_12-14.mxd

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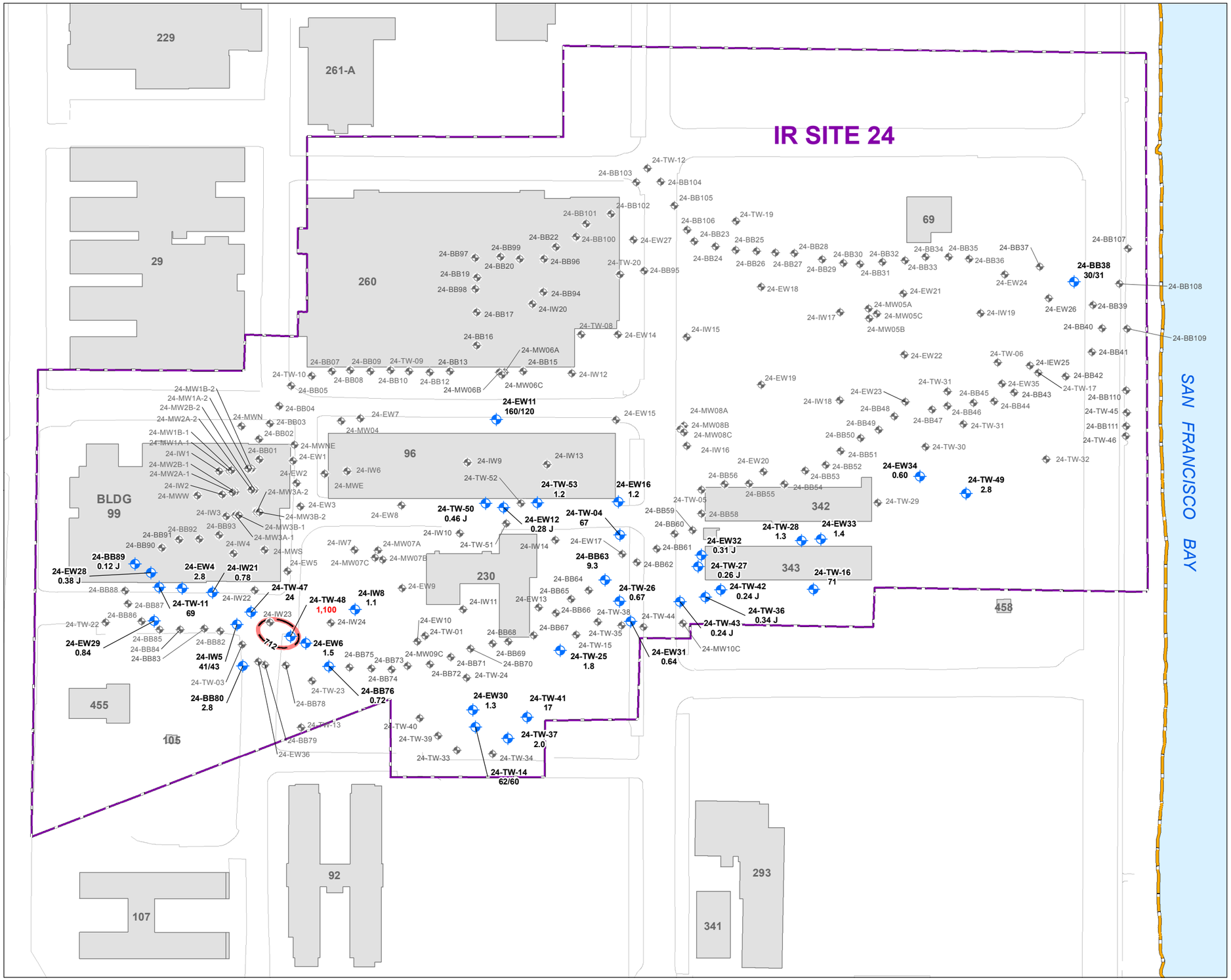

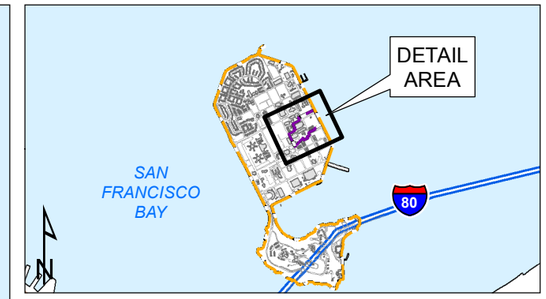

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- 712 — CIS-1,2-DCE CONCENTRATION EXCEEDED PROJECT REMEDIATION GOAL (712 µg/L)

WELL ID — 24-IW5 41/43 — DUPLICATE SAMPLE RESULTS

CIS-1,2-DCE (µg/L)

NOTES:
RED VALUE EXCEEDED PROJECT REMEDIATION GOAL
CIS-1,2-DCE - CIS-1,2- DICHLOROETHENE
J - ESTIMATED CONCENTRATION
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

DEPARTMENT OF THE NAVY — SAN DIEGO, CALIFORNIA
NAVAL FACILITIES ENGINEERING COMMAND
NAVFAC Naval Facilities Engineering Command NAVFAC SOUTHWEST

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 16

CIS-1,2-DCE IN GROUNDWATER
IR SITE 24, DECEMBER 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig16_Annual_Site24_CIS-DCE_12-14.mxd

Date: 1/18/2015

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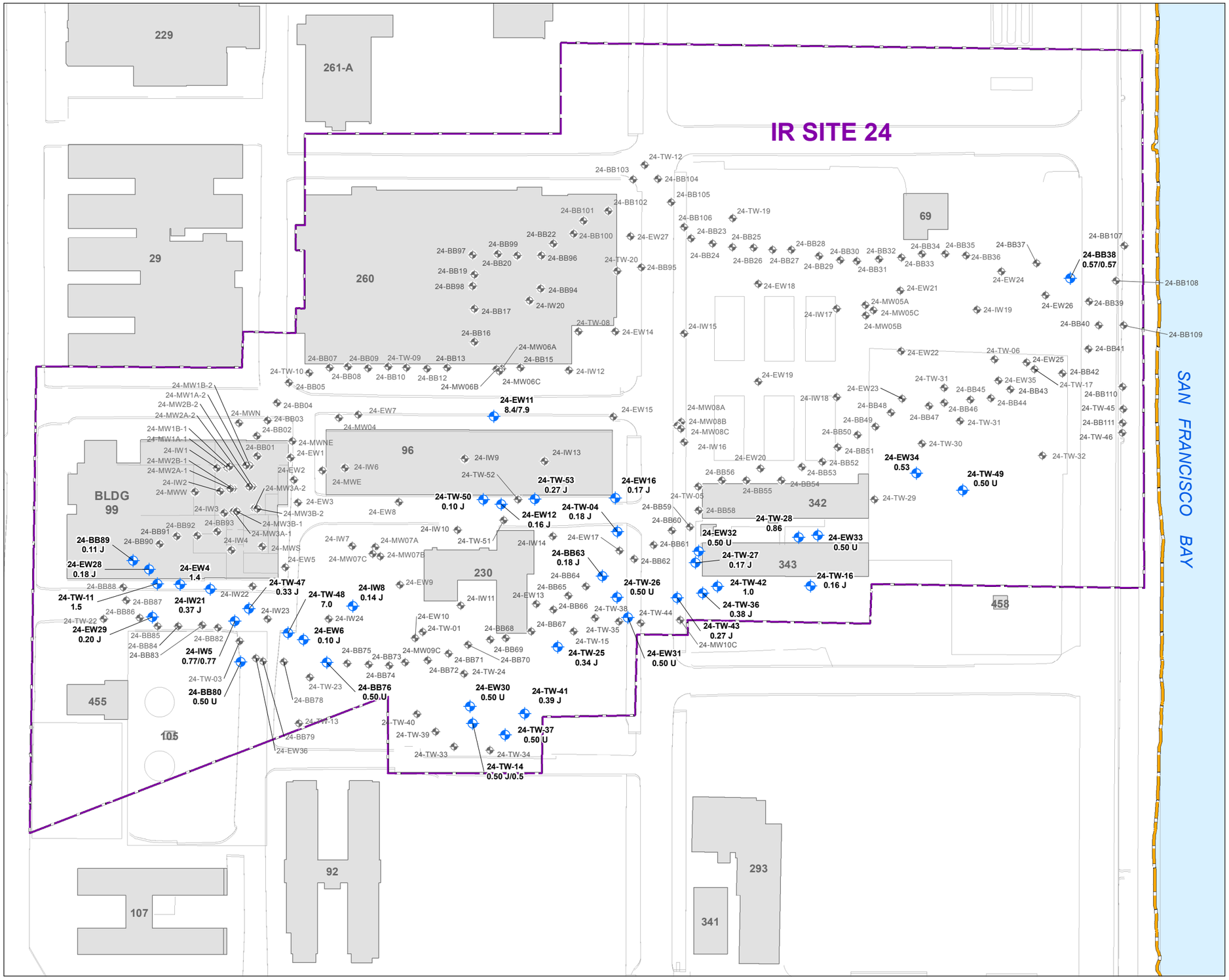

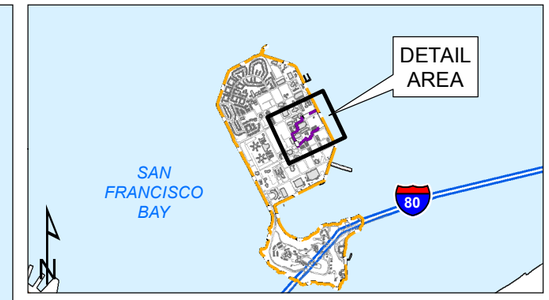

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE

WELL ID
24-IW5
0.77/0.77
TRANS-1,2-DCE (µg/L)
DUPLICATE SAMPLE RESULTS

NOTES:
J - ESTIMATED CONCENTRATION
TRANS-1,2-DCE - TRANS-1,2-DICHLOROETHENE
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

FIGURE 17

TRANS-1,2-DCE IN GROUNDWATER
IR SITE 24, DECEMBER 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig17_Annual_Site24_Trans-DCE_12-14.mxd

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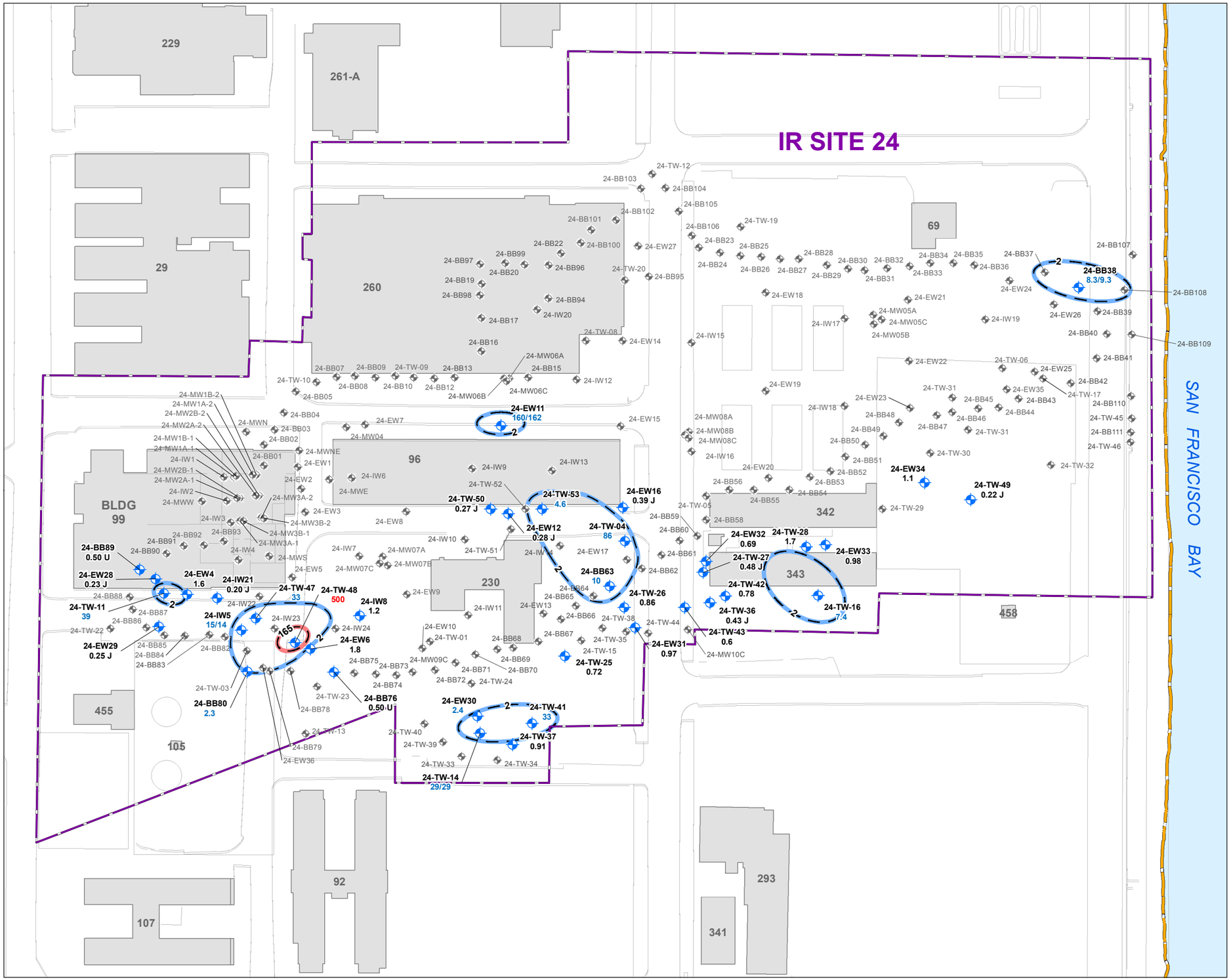

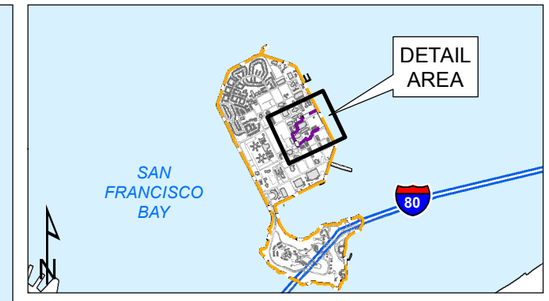

LEGEND

- MONITORING WELL GAUGED AND SAMPLED SEMIANNUALLY
- MONITORING WELLS NOT INCLUDED IN IR SITE 24 MONITORING PROGRAM
- NAVAL STATION TREASURE ISLAND BOUNDARY
- IR SITE 24 BOUNDARY
- BUILDING/STRUCTURE
- VINYL CHLORIDE CONCENTRATION EXCEEDED ALTERNATATE PROJECT REMEDIATION GOAL (2 µg/L)
- VINYL CHLORIDE CONCENTRATION EXCEEDED PROJECT REMEDIATION GOAL (165 µg/L)

WELL ID: 24-IW5
VINYL CHLORIDE (µg/L): 15/14
DUPLICATE SAMPLE RESULTS

NOTES:
BLUE VALUE EXCEEDED ALTERNATE PROJECT REMEDIATION GOAL
RED VALUE EXCEEDED PROJECT REMEDIATION GOAL
J - ESTIMATED CONCENTRATION
U - NOT DETECTED
µg/L - MICROGRAMS PER LITER

GRAPHIC SCALE
0 60 120 240
(IN FEET)
1 INCH = 120 FEET

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

FIGURE 18

VINYL CHLORIDE IN GROUNDWATER
IR SITE 24, DECEMBER 2013

TREVET

DATE: DECEMBER 2014
CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig18_Annual_Site24_VC_12-14.mxd

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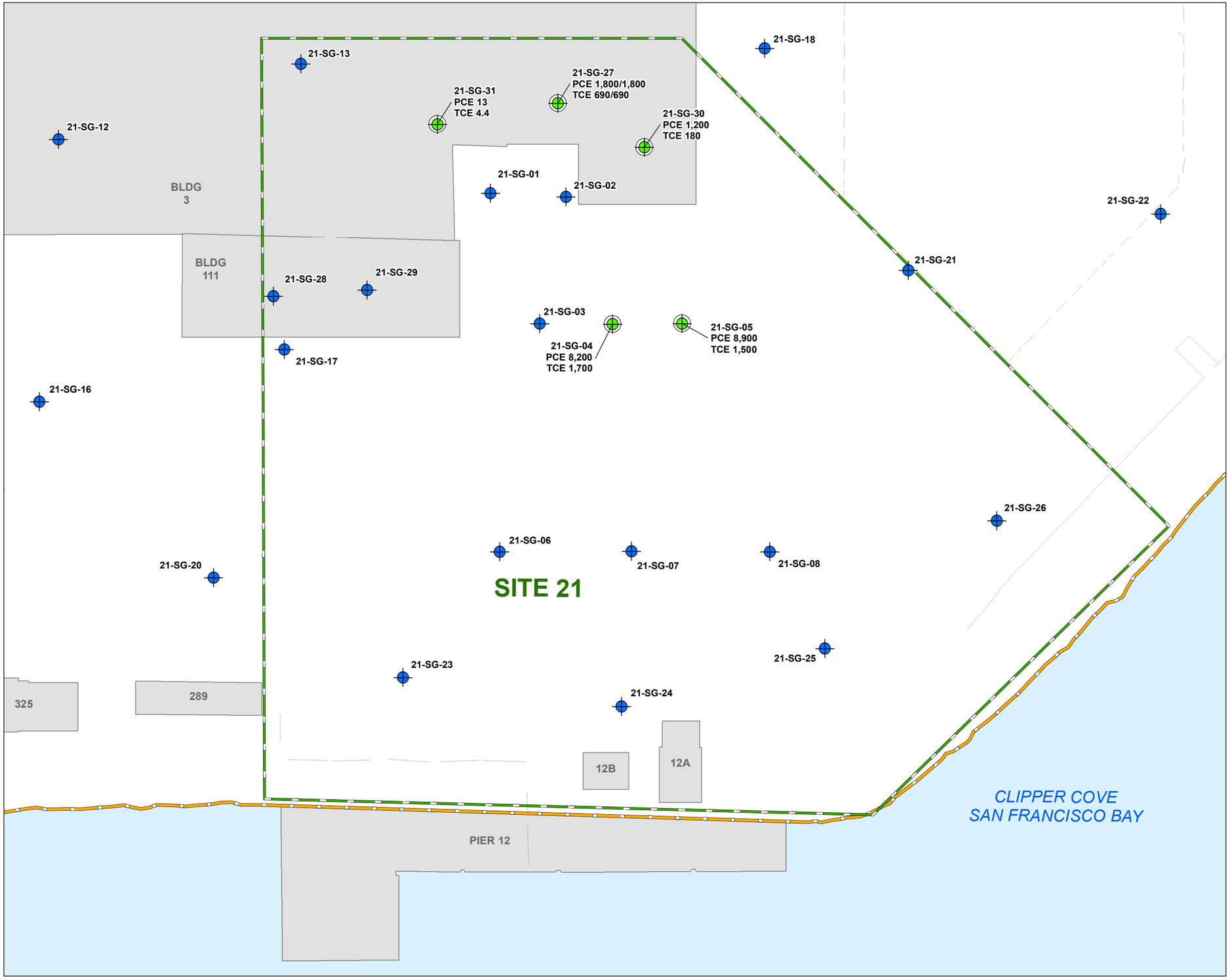

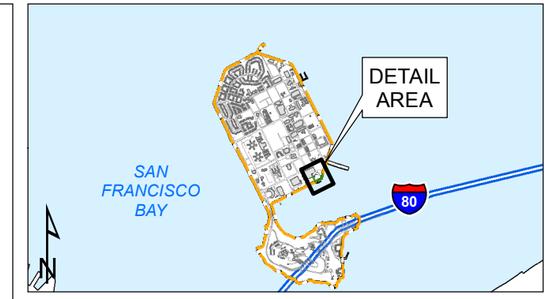

LEGEND

- EXISTING SOIL GAS PROBE INCLUDED IN MONITORING PROGRAM
- EXISTING SOIL GAS PROBE
- NAVAL STATION TREASURE ISLAND BOUNDARY
- SITE 21 BOUNDARY
- BUILDING/STRUCTURE

WELL ID

21-SG-27
PCE 1,800/1,800
TCE 690/690

ANAYLITE

DUPLICATE SAMPLE RESULT

SAMPLE RESULT (µg/M^3)

NOTES:
PCE - TETRACHLOROETHENE
TCE - TRICHLOROETHENE
µg/M^3 - MICROGRAMS PER CUBIC METER

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

2013 ANNUAL BASEWIDE GROUNDWATER AND SOIL GAS MONITORING REPORT, NAVAL STATION TREASURE ISLAND SAN FRANCISCO, CALIFORNIA

FIGURE 19

PCE AND TCE IN SOIL GAS
IR SITE 21, DECEMBER 2013

TREVET

DATE: DECEMBER 2014

CONTRACT NO.: N62473-13-D-4803

Date: 1/18/2015 Path: N:\GIS_Projects\TreasureIsland\Figs_Annual_Basewide_12_14\Fig19_Annual_Site21_PCE_TCE_12-14.mxd

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Table 19. Soil Gas Quality Control Analytical Results, December 2013, IR Site 21

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Table 1. Monitoring Program
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Well Identification	Sample Matrix	Analysis	Sampling Frequency	Approved Changes	Proposed Changes
IR Site 6					
06-MW25	Groundwater	COPCs: VOCs (including naphthalene), TPH-P, TPH-E MNA: Dissolved Gases, Inorganic Ions, Field Kits	Quarterly	--	Change sampling frequency to semiannual; discontinue MNA monitoring
06-MW26	Groundwater	COPCs: VOCs (including naphthalene), TPH-P, TPH-E MNA: Dissolved Gases, Inorganic Ions, Field Kits	Quarterly	--	Change sampling frequency to semiannual; discontinue MNA monitoring
IR Site 12					
SWDA Westside					
12-MW28	Groundwater	COPCs: VOCs, TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW29	Groundwater	COPCs: VOCs, TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW30	Groundwater	COPCs: VOCs, TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW31	Groundwater	COPCs: VOCs, TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
SWDA Bayside					
12-MW11	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW17	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW19	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
SWDA North Point					
12-MW13	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
175 Gateview Avenue Petroleum Area					
12-MW05	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Semiannually	--	Discontinue MNA monitoring
12-MW20	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Semiannually	--	Discontinue MNA monitoring
12-MW21	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Annually	--	Discontinue MNA monitoring
12-MW22	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Semiannually	--	Discontinue MNA monitoring
12-MW23	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Semiannually	--	Discontinue MNA monitoring
12-MW24	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Annually	--	Discontinue MNA monitoring
12-MW34	Groundwater	COPCs: TPH-P, TPH-E, Metals, Mercury, Ra-226, TDS, TSS MNA: Dissolved Gases, Inorganic Ions, Field Kits	Annually	--	Discontinue MNA monitoring
Mariner Drive Petroleum Area					
12-MW15	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
12-MW16	Groundwater	COPCs: Metals, Mercury, Ra-226, TDS, TSS	Annually	--	
IR Site 21					
21-IP07	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases	Semiannually	--	Discontinue MNA monitoring
21-MW02A	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases	Semiannually	--	Discontinue MNA monitoring
21-MW09A	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases	Semiannually	--	Discontinue MNA monitoring
21-SG-04	Soil Gas	VOCs (TO-15) Fixed Gases (U.S. EPA Method 3C Modified) Helium as tracer gas (U.S. EPA Method 3C Modified) Hydrogen Sulfide (ASTM D5504)	Semiannually through March 2014	--	Continue monitoring for 1 additional year (two semiannual events)
21-SG-05	Soil Gas	VOCs (TO-15) Helium as tracer gas (U.S. EPA Method 3C Modified)	Semiannually through March 2014	--	Continue monitoring for 1 additional year (two semiannual events)

Table 1. Monitoring Program
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Well Identification	Sample Matrix	Analysis	Sampling Frequency	Approved Changes	Proposed Changes
21-SG-27	Soil Gas	VOCs (TO-15) Fixed Gases (U.S. EPA Method 3C Modified) Helium as tracer gas (U.S. EPA Method 3C Modified) Hydrogen Sulfide (ASTM D5504)	Semiannually through March 2014	--	Continue monitoring for 1 additional year (two semiannual events)
21-SG-30	Soil Gas	VOCs (TO-15) Fixed Gases (U.S. EPA Method 3C Modified) Helium as tracer gas (U.S. EPA Method 3C Modified) Hydrogen Sulfide (ASTM D5504)	Semiannually through March 2014	--	Continue monitoring for 1 additional year (two semiannual events)
21-SG-31	Soil Gas	VOCs (TO-15) Helium as tracer gas (U.S. EPA Method 3C Modified)	Semiannually through March 2014	--	Continue monitoring for 1 additional year (two semiannual events)
IR Site 24					
24-BB38	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-BB63	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-BB76	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-BB80	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-BB89	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW11	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-EW12	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-EW16	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW28	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW29	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-EW30	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW31	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW32	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-EW33	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW34	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW4	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-EW6	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-IW21	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-IW5	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-IW8	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-04	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-11	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-14	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-16	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-25	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-26	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-27	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-28	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-36	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-37	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	

Table 1. Monitoring Program
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Well Identification	Sample Matrix	Analysis	Sampling Frequency	Approved Changes	Proposed Changes
24-TW-41	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-42	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-43	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-47	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-48	Groundwater	COCs: VOCs (target chlorinated ethenes only) MNA: Dissolved Gases, Inorganic Ions, Field Kit	Semiannually	--	Discontinue MNA monitoring
24-TW-49	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-50	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	
24-TW-53	Groundwater	COCs: VOCs (target chlorinated ethenes only)	Semiannually	--	

General note:

Monitoring program is based on the approved *Final Sampling and Analysis Plan for Groundwater Monitoring at Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California* and *Final Sampling and Analysis Plan for Soil Gas Sampling at Installation Restoration Site 21, Former Naval Station Treasure Island, San Francisco, California* (Trevet 2013)

Abbreviations and Acronyms:

-- - no changes
COCs - chemicals of concern
MNA - monitored natural attenuation
Ra - radium
TDS - total dissolved solids
TPH-E -total petroleum hydrocarbons, extractable
TPH-P - total petroleum hydrocarbons, purgeable
TSS - total suspended solids
U.S. EPA - U.S. Environmental Protection Agency
VOCs - volatile organic compounds

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Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Well Identification	Current Photograph	Well Condition or Maintenance Needed
IR Site 6		
06-MW25		Condition OK; No maintenance required.
06-MW26		Condition OK; No maintenance required.
IR Site 12		
12-MW01		Condition OK; No maintenance needed.
12-MW03		Condition OK; No maintenance needed.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

12-MW04		Condition OK; No maintenance needed.
12-MW05		Condition OK; No maintenance needed.
12-MW07		Condition OK; No maintenance needed.
12-MW09	No current photo	Well inaccessible; covered by storage trailer or soil stockpile.
12-MW11		Condition OK; No maintenance needed.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

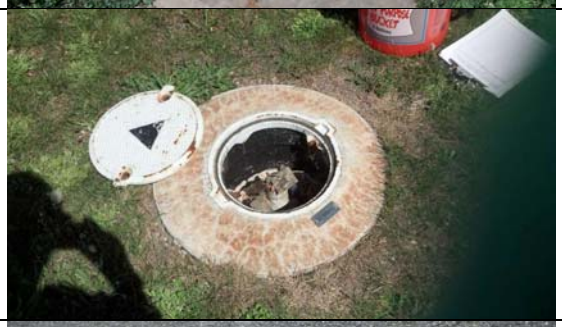
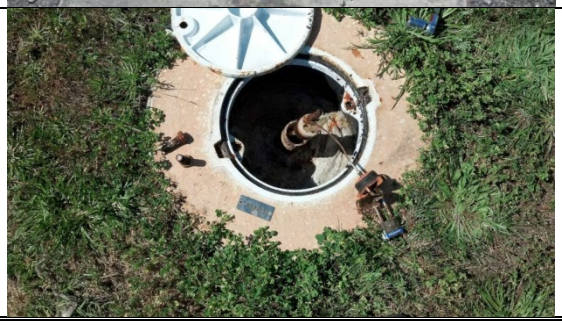
12-MW13		Gasket damaged; Replace gasket.
12-MW14		Condition OK; No maintenance needed.
12-MW15		Bolt ear broken; Replace well box.
12-MW16		Condition OK; No maintenance needed.
12-MW17		Condition OK; No maintenance needed.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

12-MW18		Gasket damaged; Replace gasket.
12-MW19		Condition OK; No maintenance needed.
12-MW20		Condition OK; No maintenance needed.
12-MW21		Wellhead and surface seal deficient; Replace wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

12-MW22		Bolts worn; Replace bolts and gasket.
12-MW23		Condition OK; No maintenance required.
12-MW24		Casing too high; Cut casing and resurvey or replace wellhead.
12-MW28		Well severely damaged by excavation equipment; properly destroy well.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

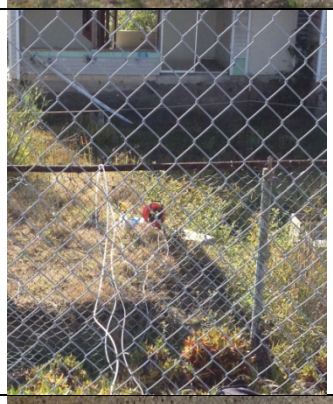
12-MW29		Bare well casing in excavation without surface completion; Install wellhead.
12-MW30		Wellhead damaged by remedial excavation; Replace wellhead.
12-MW31		Condition OK; No maintenance required.
12-MW32		Condition OK; No maintenance required.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

12-MW34		Damaged well box; Install wellhead.
IR Site 21		
21-IP07		Deficient well box and surface seal; Install wellhead.
21-MW02A		Damaged well box; Install wellhead.
21-MW09A		Damaged well box; Install wellhead.
IR Site 24		
24-BB38	No current photo	Deficient surface completion; Install wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-BB63		Deficient surface completion; Install wellhead.
24-BB76	No current photo	Deficient well box and surface seal; Install wellhead.
24-BB80		Deficient well box; Reinstall wellhead.
24-BB89		Deficient well box and surface seal; Install wellhead.
24-EW11		Deficient well box and surface seal; Install wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

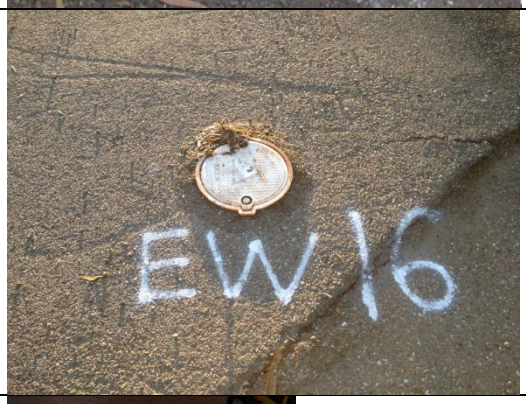
24-EW12		Deficient well box and surface seal; Install wellhead.
24-EW16		Deficient well box and surface seal; Install wellhead.
24-EW28		Deficient surface completion; Install wellhead.
24-EW29		Condition OK; No maintenance required.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-EW30		Bolt ears broken/worn; Replace wellhead.
24-EW31		Bolt ears broken/worn; Replace wellhead.
24-EW32		Bolt ears broken/worn; Replace wellhead.
24-EW33		Bolt ears broken/worn; Replace wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-EW34		Bolt ears broken/worn; Replace wellhead.
24-EW4		Deficient surface completion; Install wellhead.
24-EW6		Deficient well box and surface seal; Replace wellhead.
24-IW21		Deficient well box; Replace wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-IW5		Condition OK; No maintenance required.
24-IW8		Deficient well box and surface seal; Install wellhead.
24-TW-04		Deficient well box and surface seal; Install wellhead.
24-TW-11		Bolt ears broken/worn; Replace wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-TW-14		Deficient well box and surface seal; Install wellhead.
24-TW-16		Deficient well box and surface seal; Install wellhead.
24-TW-25		Deficient well box and surface seal; Install wellhead.
24-TW-26		Deficient well box and surface seal; Install wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-TW-27		Deficient well box and surface seal; Install wellhead.
24-TW-28		Deficient well box and surface seal; Install wellhead.
24-TW-36		Deficient well box and surface seal; Install wellhead.
24-TW-37		Deficient well box and surface seal; Install wellhead.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-TW-41		Deficient well box and surface seal; Install wellhead.
24-TW-42		Deficient well box and surface seal; Install wellhead.
24-TW-43		Deficient well box and surface seal; Install wellhead.
24-TW-47		Missing well cap and lock; Replace cap and lock.

Table 2. Monitoring Well Condition Summary
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

24-TW-48		Missing well cap and lock; Replace cap and lock.
24-TW-49		Missing well cap and lock; Replace cap and lock.
24-TW-50		Missing bolt; Replace bolt.
24-TW-53		Condition OK; No maintenance needed.

Table 3. Groundwater Elevation Data
IR Site 6, Naval Station Treasure Island

Well Identification[1]	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
06-MW25	--	03/13/13	6.30	--	
06-MW25	--	06/24/13	4.81	--	
06-MW25	--	09/16/13	4.67	--	
06-MW25	--	12/09/13	4.87	--	
06-MW26	--	03/13/13	6.12	--	
06-MW26	--	06/24/13	5.81	--	
06-MW26	--	09/16/13	5.81	--	
06-MW26	--	12/09/13	5.98	--	
12-MW04	7.32	06/12/12	3.02	4.30	
12-MW04	7.32	12/11/12	1.98	5.34	
12-MW04	7.32	06/24/13	3.16	4.16	
12-MW04	7.32	09/16/13	2.93	4.39	
12-MW04	7.32	12/09/13	3.11	4.21	

Notes:
[1] IR Site 12 monitoring well 12-MW04 was added to the groundwater level monitoring program to supplement the only two existing monitoring wells at IR Site 6 per the current SAP (Trevet 2013). A minimum of three wells are required to determine the groundwater flow direction.

Abbreviations and Acronyms:
ft - feet
TOC - top of casing
-- - elevation not available

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Table 4. Groundwater Elevation Data
IR Site 12, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
12-MW01	8.31	06/12/12	4.51	3.80	
12-MW01	8.31	12/11/12	3.80	4.51	
12-MW01	8.31	06/24/13	4.07	4.24	
12-MW03	7.98	06/12/12	2.93	5.05	
12-MW03	7.98	12/11/12	2.12	5.86	
12-MW03	7.98	06/24/13	3.03	4.95	
12-MW04	7.32	06/12/12	3.02	4.30	
12-MW04	7.32	12/11/12	1.98	5.34	
12-MW04	7.32	06/24/13	3.16	4.16	
12-MW04	7.32	09/16/13	2.93	4.39	
12-MW04	7.32	12/09/13	3.11	4.21	
12-MW05	11.49	06/12/12	7.45	4.04	
12-MW05	11.49	12/11/12	6.70	4.79	
12-MW05	11.49	06/24/13	7.54	3.95	
12-MW07	8.65	06/12/12	3.75	4.90	
12-MW07	8.65	12/11/12	2.87	5.78	
12-MW07	8.65	06/24/13	4.04	4.61	
12-MW09	8.38	06/24/13	NM	NC	Well inaccessible; covered by trailer
12-MW11	6.98	06/12/12	3.15	3.83	
12-MW11	6.98	12/11/12	3.10	3.88	
12-MW11	6.98	06/24/13	3.08	3.90	
12-MW13	7.05	06/12/12	3.42	3.63	
12-MW13	7.05	12/11/12	3.02	4.03	
12-MW13	7.05	06/24/13	3.02	4.03	
12-MW14	10.11	06/12/12	5.21	4.90	
12-MW14	10.11	12/11/12	4.15	5.96	
12-MW14	10.11	06/24/13	5.53	4.58	
12-MW15	8.29	06/12/12	3.86	4.43	
12-MW15	8.29	12/11/12	2.95	5.34	
12-MW15	8.29	06/24/13	4.90	3.39	

Table 4. Groundwater Elevation Data
IR Site 12, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
12-MW16	8.10	06/12/12	3.48	4.62	
12-MW16	8.10	12/11/12	2.21	5.89	
12-MW16	8.10	06/24/13	3.53	4.57	
12-MW17	6.70	06/12/12	2.90	3.80	
12-MW17	6.70	12/11/12	3.02	3.68	
12-MW17	6.70	06/24/13	2.02	4.68	
12-MW18	7.62	06/12/12	4.09	3.53	
12-MW18	7.62	12/11/12	4.36	3.26	
12-MW18	7.62	06/24/13	4.68	2.94	
12-MW19	6.94	06/12/12	2.61	4.33	
12-MW19	6.94	12/11/12	2.07	4.87	
12-MW19	6.94	06/24/13	3.01	3.93	
12-MW20	8.69	06/12/12	4.15	4.54	
12-MW20	8.69	12/11/12	3.17	5.52	
12-MW20	8.69	06/24/13	4.21	4.48	
12-MW21	8.47	06/12/12	3.11	5.36	
12-MW21	8.47	12/11/12	3.02	5.45	
12-MW21	8.47	06/24/13	3.91	4.56	
12-MW22	7.59	06/12/12	3.11	4.48	
12-MW22	7.59	12/11/12	2.44	5.15	
12-MW22	7.59	06/24/13	3.37	4.22	
12-MW23	7.08	06/12/12	2.83	4.25	
12-MW23	7.08	12/11/12	2.40	4.68	
12-MW23	7.08	06/24/13	3.03	4.05	
12-MW24	7.87	06/12/12	3.36	4.51	
12-MW24	7.87	12/11/12	2.62	5.25	
12-MW24	7.87	06/24/13	3.54	4.33	
12-MW28	6.71	06/24/13	NM	NC	Well damaged
12-MW29	9.39	06/24/13	6.23	3.16	
12-MW30	7.85	06/24/13	3.82	4.03	

Table 4. Groundwater Elevation Data
IR Site 12, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
12-MW31	7.51	06/12/12	3.20	4.31	
12-MW31	7.51	12/11/12	2.60	4.91	
12-MW31	7.51	06/24/13	2.84	4.67	
12-MW32	8.61	06/12/12	4.13	4.48	
12-MW32	8.61	12/11/12	2.85	5.76	
12-MW32	8.61	06/24/13	4.21	4.40	
12-MW34	11.46	06/12/12	7.67	3.79	
12-MW34	11.46	12/11/12	7.45	4.01	
12-MW34	11.46	06/24/13	7.77	3.69	

Abbreviations and Acronyms:

ft - feet
NC - not calculated
NM - not measured, well was inaccessible
TOC - top of casing
-- - elevation not available

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Table 5. Groundwater Elevation Data, June 2013 Through December 2013
IR Site 21, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
21-IP07	11.20	06/25/12	6.96	4.24	
21-IP07	11.20	09/17/12	6.98	4.22	
21-IP07	11.20	12/03/12	5.94	5.26	
21-IP07	11.20	03/04/13	7.23	3.97	
21-IP07	11.20	12/09/13	7.02	4.18	
21-MW02A	10.79	06/25/12	6.64	4.15	
21-MW02A	10.79	09/17/12	6.56	4.23	
21-MW02A	10.79	12/03/12	5.59	5.20	
21-MW02A	10.79	03/04/13	6.78	4.01	
21-MW02A	10.79	12/09/13	6.71	4.08	
21-MW09A	11.12	06/25/12	6.93	4.19	
21-MW09A	11.12	09/17/12	NM	NC	
21-MW09A	11.12	12/03/12	5.95	5.17	
21-MW09A	11.12	03/04/13	7.18	3.94	
21-MW09A	11.12	12/09/13	7.00	4.12	

Abbreviations and Acronyms:

ft - feet
NC - not calculated
NM - not measured, well was inaccessible
TOC - top of casing

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Table 6. Groundwater Elevation Data
IR Site 24, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
24-BB38	--	09/18/12	8.52	--	
24-BB38	--	03/05/13	8.69	--	
24-BB38	--	12/10/13	8.66	--	
24-BB63	13.24	09/18/12	7.66	5.58	
24-BB63	13.24	03/05/13	7.11	6.13	
24-BB63	13.24	12/10/13	7.89	5.35	
24-BB76	13.07	06/23/12	6.52	6.55	
24-BB76	13.07	09/18/12	6.26	6.81	
24-BB76	13.07	12/04/12	5.21	7.86	
24-BB76	13.07	03/05/13	6.36	6.71	
24-BB76	13.07	12/10/13	NM	NC	well damaged
24-BB80	13.11	06/23/12	6.23	6.88	
24-BB80	13.11	12/04/12	4.81	8.30	
24-BB80	13.11	12/10/13	7.27	5.84	
24-BB89	12.26	12/10/13	6.74	5.52	
24-EW11	--	06/23/12	6.59	--	
24-EW11	--	09/18/12	6.97	--	
24-EW11	--	03/05/13	6.47	--	
24-EW11	--	12/10/13	7.22	--	
24-EW12	--	06/23/12	6.58	--	
24-EW12	--	09/18/12	7.05	--	
24-EW12	--	03/05/13	6.42	--	
24-EW12	--	12/10/13	7.13	--	
24-EW16	--	12/04/12	5.82	--	
24-EW16	--	12/10/13	7.55	--	
24-EW28	--	12/10/13	6.87	--	
24-EW29	--	12/10/13	6.55	--	
24-EW30	--	06/23/12	5.65	--	
24-EW30	--	09/18/12	6.43	--	
24-EW30	--	03/05/13	5.71	--	
24-EW30	--	12/10/13	6.67	--	

Table 6. Groundwater Elevation Data
IR Site 24, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
24-EW31	--	12/10/13	6.77	--	
24-EW32	--	06/23/12	7.31	--	
24-EW32	--	09/18/12	7.71	--	
24-EW32	--	03/05/13	7.24	--	
24-EW32	--	12/10/13	7.88	--	
24-EW33	--	06/23/12	6.59	--	
24-EW33	--	09/18/12	7.76	--	
24-EW33	--	12/04/12	5.98	--	
24-EW33	--	03/05/13	7.55	--	
24-EW33	--	12/10/13	7.91	--	
24-EW34	--	06/23/12	7.61	--	
24-EW34	--	09/18/12	7.88	--	
24-EW34	--	12/04/12	6.34	--	
24-EW34	--	03/05/13	--	--	could not access
24-EW34	--	12/10/13	8.10	--	
24-EW4	--	06/23/12	5.86	--	
24-EW4	--	09/18/12	6.62	--	
24-EW4	--	03/05/13	5.71	--	
24-EW4	--	12/10/13	6.89	--	
24-EW6	--	06/23/12	5.97	--	
24-EW6	--	09/18/12	6.71	--	
24-EW6	--	03/05/13	5.74	--	
24-EW6	--	12/10/13	6.88	--	
24-IW21	--	06/23/12	5.85	--	
24-IW21	--	09/18/12	6.63	--	
24-IW21	--	03/05/13	5.69	--	
24-IW21	--	12/10/13	6.85	--	
24-IW5	--	12/10/13	6.51	--	
24-IW8	--	06/23/12	6.44	--	
24-IW8	--	09/18/12	7.11	--	
24-IW8	--	03/05/13	6.25	--	
24-IW8	--	12/10/13	7.30	--	

Table 6. Groundwater Elevation Data
IR Site 24, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
24-TW-04	13.00	12/04/12	5.58	7.42	
24-TW-04	13.00	12/10/13	7.65	5.35	
24-TW-11	12.76	06/23/12	5.39	7.37	
24-TW-11	12.76	09/18/12	6.12	6.64	
24-TW-11	12.76	03/05/13	5.25	7.51	
24-TW-11	12.76	12/10/13	6.48	6.28	
24-TW-14	12.02	06/23/12	6.29	5.73	
24-TW-14	12.02	09/18/12	6.21	5.81	
24-TW-14	12.02	03/05/13	6.21	5.81	
24-TW-14	12.02	12/10/13	7.13	4.89	
24-TW-16	12.63	09/18/12	7.92	4.71	
24-TW-16	12.63	03/05/13	7.74	4.89	
24-TW-16	12.63	12/10/13	8.17	4.46	
24-TW-25	--	06/23/12	6.48	--	
24-TW-25	--	12/04/12	5.94	--	
24-TW-25	--	12/10/13	7.21	--	
24-TW-26	--	06/23/12	7.02	--	
24-TW-26	--	09/18/12	7.45	--	
24-TW-26	--	12/04/12	5.45	--	
24-TW-26	--	03/05/13	6.90	--	
24-TW-26	--	12/10/13	7.83	--	
24-TW-27	--	12/10/13	7.63	--	
24-TW-28	--	06/23/12	7.53	--	
24-TW-28	--	09/18/12	7.91	--	
24-TW-28	--	12/04/12	6.38	--	
24-TW-28	--	03/05/13	7.69	--	
24-TW-28	--	12/10/13	8.07	--	
24-TW-36	--	06/23/12	7.97	--	
24-TW-36	--	09/18/12	8.35	--	
24-TW-36	--	12/04/12	6.38	--	
24-TW-36	--	03/05/13	7.93	--	
24-TW-36	--	12/10/13	8.50	--	

Table 6. Groundwater Elevation Data
IR Site 24, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
24-TW-37	--	06/23/12	6.66	--	
24-TW-37	--	09/18/12	7.27	--	
24-TW-37	--	12/04/12	5.40	--	
24-TW-37	--	03/05/13	6.55	--	
24-TW-37	--	12/10/13	7.49	--	
24-TW-41	--	06/23/12	7.00	--	
24-TW-41	--	09/18/12	8.61	--	
24-TW-41	--	03/05/13	6.91	--	
24-TW-41	--	12/10/13	7.80	--	
24-TW-42	--	06/23/12	8.05	--	
24-TW-42	--	12/04/12	6.43	--	
24-TW-42	--	12/10/13	8.57	--	
24-TW-43	--	12/10/13	7.33	--	
24-TW-47	--	06/23/12	5.47	--	
24-TW-47	--	09/18/12	6.28	--	
24-TW-47	--	03/05/13	5.30	--	
24-TW-47	--	12/10/13	6.47	--	
24-TW-48	--	06/23/12	5.80	--	
24-TW-48	--	09/18/12	6.57	--	
24-TW-48	--	03/05/13	5.60	--	
24-TW-48	--	12/10/13	6.76	--	
24-TW-49	--	06/23/12	8.64	--	
24-TW-49	--	09/18/12	8.87	--	
24-TW-49	--	12/04/12	7.50	--	
24-TW-49	--	03/05/13	8.93	--	
24-TW-49	--	12/10/13	9.10	--	
24-TW-50	--	06/23/12	6.33	--	
24-TW-50	--	09/18/12	6.81	--	
24-TW-50	--	03/05/13	6.21	--	
24-TW-50	--	12/10/13	7.07	--	

Table 6. Groundwater Elevation Data
IR Site 24, Naval Station Treasure Island

Well Identification	Well TOC Elevation (ft)	Date Measured	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Comments
24-TW-53	--	06/23/12	6.60	--	
24-TW-53	--	09/18/12	7.04	--	
24-TW-53	--	03/05/13	6.46	--	
24-TW-53	--	12/10/13	7.26	--	

Abbreviations and Acronyms:

ft - feet
NC - not calculated
NM - not measured, well was inaccessible
TOC - top of casing
-- - elevation not available

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Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	TTPH[1] (µg/L)	1,1,1-Trichloro ethane (µg/L)	1,1,2,2-Tetrachloro ethane (µg/L)	1,1,2-Trichloro ethane (µg/L)
Analytical Method		M8015	M8015	M8015	M8015	8260B	8260B	8260B
Toxicity Screening Criterion[2]		1,400	1,400	1,400	1,400	3120	902	NE
06-MW25	03/13/13	1,100	270	510 U	1,370	--	--	--
06-MW25	04/16/13	--	--	--	--	0.50 U	0.50 U	0.50 U
06-MW25	06/24/13	370	130	460 U	500	0.50 U	0.50 U	0.50 U
06-MW25	09/16/13	11 J	100 U	510 U	11	0.50 U	0.50 U	0.50 U
06-MW25 (dup)	09/16/13	10 J	96 U	480 U	10	0.50 U	0.50 U	0.50 U
06-MW25	12/10/13	120	100 U	510 U	120	0.50 U	0.50 U	0.50 U
06-MW26	03/13/13	100 U	100 U	500 U	100 U	--	--	--
06-MW26	04/16/13	--	--	--	--	0.50 U	0.50 U	0.50 U
06-MW26	06/24/13	24 J	110 U	550 U	24	0.50 U	0.50 U	0.50 U
06-MW26	09/16/13	15 J	93 U	460 U	15	0.50 U	0.50 U	0.50 U
06-MW26	12/10/13	100 U	110 U	550 U	100 U	0.50 U	0.50 U	0.50 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	1,1-Dichloro ethane (µg/L)	1,1-Dichloro ethene (µg/L)	1,2,3-Trichloro benzene (µg/L)	1,2,4-Trichloro benzene (µg/L)	1,2-Dibromo-3-Chloro propane (µg/L)	1,2-Dichloro benzene (µg/L)	1,2-Dichloro ethane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	22400	NE	NE	NE	129	11300
06-MW25	03/13/13	--	--	--	--	--	--	--
06-MW25	04/16/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW25	06/24/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW25	09/16/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW25 (dup)	09/16/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW25	12/10/13	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	0.50 U	0.50 U
06-MW26	03/13/13	--	--	--	--	--	--	--
06-MW26	04/16/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW26	06/24/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW26	09/16/13	0.50 U	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U
06-MW26	12/10/13	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	0.50 U	0.50 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	1,2-Dichloro propane (µg/L)	1,3-Dichloro benzene (µg/L)	1,4-Dichloro benzene (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-Pentanone (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		3040	129	129	NE	NE	NE
06-MW25	03/13/13	--	--	--	--	--	--
06-MW25	04/16/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW25	06/24/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW25	09/16/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW25 (dup)	09/16/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW25	12/10/13	1.0 U	0.50 U	0.50 U	10 U	10 U	10 U
06-MW26	03/13/13	--	--	--	--	--	--
06-MW26	04/16/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW26	06/24/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW26	09/16/13	2.0 U	0.50 U	0.50 U	10 U	10 U	20 U
06-MW26	12/10/13	1.0 U	0.50 U	0.50 U	10 U	10 U	10 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Acetone (µg/L)	Benzene (µg/L)	Bromo chloro methane (µg/L)	Bromo dichloro methane (µg/L)	Bromoform (µg/L)	Bromo methane (µg/L)	Carbon Disulfide (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	700	6400	6400	6400	6400	NE
06-MW25	03/13/13	--	--	--	--	--	--	--
06-MW25	04/16/13	10 U	11	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW25	06/24/13	10 U	29	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW25	09/16/13	10 U	0.88	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW25 (dup)	09/16/13	10 U	0.93	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW25	12/10/13	10 U	3.7	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW26	03/13/13	--	--	--	--	--	--	--
06-MW26	04/16/13	10 U	2.2	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW26	06/24/13	10 U	0.55	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW26	09/16/13	10 U	0.23 J	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U
06-MW26	12/10/13	10 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.11 J

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Carbon Tetra chloride (µg/L)	Chloro benzene (µg/L)	Chloro ethane (µg/L)	Chloroform (µg/L)	Chloro methane (µg/L)	Cis-1,2-Dichloro ethene (µg/L)	Cis-1,3-Dichloro propene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	129	NE	6400	6400	22400	79
06-MW25	03/13/13	--	--	--	--	--	--	--
06-MW25	04/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW25	06/24/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW25	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW25 (dup)	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW25	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW26	03/13/13	--	--	--	--	--	--	--
06-MW26	04/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW26	06/24/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW26	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06-MW26	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.11 J	0.50 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Dibromo chloro methane (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	Methyl tert-butyl Ether (µg/L)	Methylene Chloride (µg/L)	Styrene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	43	NE	8000	6400	NE
06-MW25	03/13/13	--	--	--	--	--	--
06-MW25	04/16/13	0.50 U	**76**	8.6	0.50 U	2.0 U	0.50 U
06-MW25	06/24/13	0.50 U	**51**	5.5	0.50 U	2.0 U	0.50 U
06-MW25	09/16/13	0.50 U	2.0 U	2.0 U	0.50 U	2.0 U	0.50 U
06-MW25 (dup)	09/16/13	0.50 U	2.0 U	2.0 U	0.50 U	2.0 U	0.50 U
06-MW25	12/10/13	0.50 U	3.8	0.88 J	0.50 U	2.0 U	0.50 U
06-MW26	03/13/13	--	--	--	--	--	--
06-MW26	04/16/13	0.50 U	8.6	3.2	0.50 U	2.0 U	0.50 U
06-MW26	06/24/13	0.50 U	1.5 J	0.32 J	0.50 U	2.0 U	0.50 U
06-MW26	09/16/13	0.50 U	1.8 J	0.54 J	0.50 U	2.0 U	0.50 U
06-MW26	12/10/13	0.50 U	1.0 U	1.0 U	0.50 U	2.0 U	0.50 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Tetrachloro ethene (µg/L)	Toluene (µg/L)	Trans-1,2-Dichloro ethene (µg/L)	Trans-1,3-Dichloro propene (µg/L)	Trichloro ethene (µg/L)	Vinyl Acetate (µg/L)	Vinyl Chloride (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		450	5,000	44800	79	200	NE	NE
06-MW25	03/13/13	--	--	--	--	--	--	--
06-MW25	04/16/13	0.50 U	28	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
06-MW25	06/24/13	0.50 U	12	0.50 U	0.50 U	0.30 J	1.0 U	0.50 U
06-MW25	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.21 J	1.0 U	0.50 U
06-MW25 (dup)	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.24 J	1.0 U	0.50 U
06-MW25	12/10/13	0.50 U	0.72	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
06-MW26	03/13/13	--	--	--	--	--	--	--
06-MW26	04/16/13	0.50 U	6.1	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
06-MW26	06/24/13	0.50 U	0.71	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
06-MW26	09/16/13	0.50 U	0.22 J	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
06-MW26	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.14 J	1.0 U	0.50 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	m- and p-Xylenes (µg/L)	o-Xylene (µg/L)	Xylenes (Total) (µg/L)	Naphthalene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	NE	NE	235
06-MW25	03/13/13	--	--	--	--
06-MW25	04/16/13	120	48	160	--
06-MW25	06/24/13	27	7.8	35	5.9
06-MW25	09/16/13	2.0 U	0.50 U	2.0 U	1.0 U
06-MW25 (dup)	09/16/13	2.0 U	0.50 U	2.0 U	1.0 U
06-MW25	12/10/13	4.1	0.84	5.0	2.3
06-MW26	03/13/13	--	--	--	--
06-MW26	04/16/13	4.2	0.87	5.0	--
06-MW26	06/24/13	7.5	1.9	9.4	1.0 U
06-MW26	09/16/13	2.4	0.50 U	2.4	1.0 U
06-MW26	12/10/13	2.0 U	0.50 U	1.0 U	1.0 U

Table 7. Groundwater Analytical Results - TPH and VOCs
IR Site 6, Naval Station Treasure Island

Notes:

[1]TTPH was calculated based on the sum of reportable concentrations of TPHp, TPHd, and TPHmo

[2]Most stringent value taken from the groundwater screening criteria table in Appendix A of the *Annual Groundwater Status Report: Summary of Groundwater Monitoring at Site 12, August and November 2007 Naval Station Treasure Island San Francisco, California* (PTES 2008).

Highlighted data indicates value exceeded the toxicity screening criterion

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting limit and method detection limit
NE - not established
TPHg - total petroleum hydrocarbons in the purgeable (gasoline) range (C6 to C10)
TPHd - total petroleum hydrocarbons in the diesel range (C10 to C24)
TPHmo - total petroleum hydrocarbons in the motor oil range (C24 to C34)
TTPH - total total petroleum hydrocarbons (C6 to C34)
U - validation flag signifying analyte not reported at or above the method detection limit
VOCs - volatile organic compounds

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Table 8. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as Nitrogen (mg/L)	Sulfide (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	300.0	353.3	376.1
06-MW25	03/13/13	1,000	5.0 U	5.0 U	17.9	19.3	0.1 U	1 U
06-MW25	06/24/13	1,200	5.0 U	5.0 U	12.2	18.3	0.1 U	1 U
06-MW25	09/16/13	220	5.0 U	5.0 U	21.1	21.8	0.1 U	1 U
06-MW25 (dup)	09/16/13	250	5.0 U	5.0 U	20.4	21.1	0.1 U	1 U
06-MW25	12/10/13	1,600	5.0 U	5.0 U	12.4	15.8	0.1 U	0.1 U
06-MW25	12/18/13	--	--	--	--	--	--	--
06-MW26	03/13/13	230	5.0 U	5.0 U	76.5	27.9	0.1 U	1 U
06-MW26	06/24/13	200	5.0 U	5.0 U	123	39.5	0.1 U	1 U
06-MW26	09/16/13	150	5.0 U	5.0 U	91.4	35.1	0.1 U	1 U
06-MW26	12/10/13	76	5.0 U	5.0 UJ	54.5	30.4	0.1 U	0.1 U
06-MW26	12/18/13	--	--	--	--	--	--	--

Table 8. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 6, Naval Station Treasure Island

Well Identification	Date Sampled	Alkalinity (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
Analytical Method		SM2320B	Kit	Kit	Kit
06-MW25	03/13/13	--	372	6.6	4.83
06-MW25	06/24/13	--	242	5.25	0.410
06-MW25	09/16/13	255	--	0.16	0.461
06-MW25 (dup)	09/16/13	254	--	--	--
06-MW25	12/10/13	261	--	--	--
06-MW25	12/18/13	--	--	0.08	0.763
06-MW26	03/13/13	--	287	4.75	4.82
06-MW26	06/24/13	--	205	6.05	0.018
06-MW26	09/16/13	265	--	0.08	0.761
06-MW26	12/10/13	261	--	--	--
06-MW26	12/18/13	--	--	0.13	0.688

Table 8. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 6, Naval Station Treasure Island

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting limit and method detection limit
Kit - field test kit (Hach or similar)
mg/L - milligrams per liter
TDS - total dissolved solids
TSS - total suspended solids
U - validation flag signifying analyte not reported at or above the method detection limit

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Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	TTPH[1] (µg/L)	1,1,1-Trichloro ethane (µg/L)	1,1,2,2-Tetrachloro ethane (µg/L)	1,1,2-Trichloro ethane (µg/L)	1,1-Dichloro ethane (µg/L)
Analytical Method		M8015	M8015	M8015	M8015	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		1400	1400	1400	1400	3120	902	NE	NE
SWDA Westside									
12-MW28	12/14/11	100 U	110 U	560 U	110 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW28	06/26/13	100 U	100 U	520 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW29	12/14/11	100 U	110 U	520 U	110 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW29	06/26/13	100 U	54 J	57 J	111	0.50 U	0.50 U	0.50 U	0.50 U
12-MW30	12/14/11	100 U	98 U	490 U	98 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW30	06/26/13	100 U	100 U	520 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/09/08	100 U	--	--	100 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/01/09	100 U	94 U	470 U	94 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/06/10	100 U	94 U	470 U	94 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/15/11	100 U	95 U	470 U	95 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW31	12/11/12	100 U	98 U	490 U	98 U	0.5 U	0.5 U	0.5 U	0.5 U
SWDA Bayside									
12-MW11	12/14/11	100 U	100 U	520 U	100 U	--	--	--	--
12-MW17	12/09/08	100 U	94 UJ	470 UJ	94 UJ	--	--	--	--
12-MW17	12/01/09	100 U	97 U	480 U	97 U	--	--	--	--
12-MW17	12/07/10	100 U	58 J	470 U	58	--	--	--	--
12-MW17	12/15/11	100 U	100 U	520 U	100 U	--	--	--	--
12-MW19	12/09/08	--	500 J	250 J	750	0.50 U	0.50 U	0.50 U	0.50 U
12-MW19	12/01/09	31 J	330	470 U	361	--	--	--	--
12-MW19	12/06/10	29 J	360	480 U	389	--	--	--	--
SWDA North Point									
12-MW13	12/13/11	100 U	100 U	520 U	100 U	--	--	--	--
12-MW13	12/12/12	100 U	93 U	460 U	93 U	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,1-Dichloro ethene (µg/L)	1,2,3-Trichloro benzene (µg/L)	1,2,4-Trichloro benzene (µg/L)	1,2-Dibromo-3-Chloro propane (µg/L)	1,2-Dichloro benzene (µg/L)	1,2-Dichloro ethane (µg/L)	1,2-Dichloro propane (µg/L)	1,3-Dichloro benzene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		22400	NE	NE	NE	129	11300	3040	129
SWDA Westside									
12-MW28	12/14/11	0.5 U	2 U	2 U	2 U	0.5 U	0.5 U	2 U	0.5 U
12-MW28	06/26/13	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW29	12/14/11	0.5 U	2 U	2 U	2 U	0.5 U	0.5 U	2 U	0.5 U
12-MW29	06/26/13	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW30	12/14/11	0.5 U	2 U	2 U	2 U	0.5 U	0.5 U	2 U	0.5 U
12-MW30	06/26/13	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW31	12/09/08	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW31	12/01/09	0.50 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW31	12/06/10	0.50 U	2.0 UJ	2.0 UJ	2.0 U	0.50 U	0.50 U	2.0 U	0.50 U
12-MW31	12/15/11	0.5 U	2 U	2 U	2 U	0.5 U	0.5 U	2 U	0.5 U
12-MW31	12/11/12	0.5 U	2 U	2 U	2 U	0.5 U	0.5 U	2 U	0.5 U
SWDA Bayside									
12-MW11	12/14/11	--	--	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--	--	--
12-MW19	12/09/08	0.50 U	2.0 U	2.0 U	2.0 U	2.7	0.37 J	2.0 U	0.50 U
12-MW19	12/01/09	--	--	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--	--	--
SWDA North Point									
12-MW13	12/13/11	--	--	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,4-Dichloro benzene (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-Pentanone (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromo chloro methane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		129	NE	NE	NE	NE	700	6400
SWDA Westside								
12-MW28	12/14/11	0.5 U	10 U	10 U	20 U	10 U	0.5 U	0.5 U
12-MW28	06/26/13	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW29	12/14/11	0.5 U	10 U	10 U	20 U	10 U	0.5 U	0.5 U
12-MW29	06/26/13	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW30	12/14/11	0.5 U	10 U	10 U	20 U	10 U	0.5 U	0.5 U
12-MW30	06/26/13	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW31	12/09/08	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW31	12/01/09	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW31	12/06/10	0.50 U	10 U	10 U	20 U	10 U	0.50 U	0.50 U
12-MW31	12/15/11	0.5 U	10 U	10 U	20 U	10 U	0.5 U	0.5 U
12-MW31	12/11/12	0.5 U	10 U	10 U	20 U	10 U	0.5 U	0.5 U
SWDA Bayside								
12-MW11	12/14/11	--	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--	--
12-MW19	12/09/08	0.72	10 U	10 U	20 U	10 U	1.9	0.50 U
12-MW19	12/01/09	--	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--	--
SWDA North Point								
12-MW13	12/13/11	--	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Bromo dichloro methane (µg/L)	Bromoform (µg/L)	Bromo methane (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetra chloride (µg/L)	Chloro benzene (µg/L)	Chloro ethane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	6400	NE	6400	129	NE
SWDA Westside								
12-MW28	12/14/11	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW28	06/26/13	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW29	12/14/11	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW29	06/26/13	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW30	12/14/11	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW30	06/26/13	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/09/08	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/01/09	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/06/10	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
12-MW31	12/15/11	0.28 J	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
12-MW31	12/11/12	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
SWDA Bayside								
12-MW11	12/14/11	--	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--	--
12-MW19	12/09/08	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	13	0.50 U
12-MW19	12/01/09	--	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--	--
SWDA North Point								
12-MW13	12/13/11	--	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chloroform (µg/L)	Chloro methane (µg/L)	Cis-1,2-Dichloro ethene (µg/L)	Cis-1,3-Dichloro propene (µg/L)	Dibromo chloro methane (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	Methyl tert-butyl Ether (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	22400	79	6400	43	NE	8000
SWDA Westside									
12-MW28	12/14/11	0.5 U	0.5 U	1.4	0.5 U	0.5 U	2 U	2 U	0.5 U
12-MW28	06/26/13	0.50 U	0.50 U	1.7	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW29	12/14/11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U
12-MW29	06/26/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW30	12/14/11	0.47 J	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U
12-MW30	06/26/13	0.21 J	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW31	12/09/08	15	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW31	12/01/09	18	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW31	12/06/10	0.99	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U
12-MW31	12/15/11	25	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U
12-MW31	12/11/12	28	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	0.5 U
SWDA Bayside									
12-MW11	12/14/11	--	--	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--	--	--
12-MW19	12/09/08	0.50 U	0.50 U	0.55	0.50 U	0.50 U	2.0 U	0.50 J	0.50 U
12-MW19	12/01/09	--	--	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--	--	--
SWDA North Point									
12-MW13	12/13/11	--	--	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methylene Chloride (µg/L)	Styrene (µg/L)	Tetrachloro ethene (µg/L)	Toluene (µg/L)	Trans-1,2-Dichloro ethene (µg/L)	Trans-1,3-Dichloro propene (µg/L)	Trichloro ethene (µg/L)	Vinyl Acetate (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	NE	450	5000	44800	79	200	NE
SWDA Westside									
12-MW28	12/14/11	2 U	0.5 U	0.5 U	0.5 U	0.67	0.5 U	1.5	1 U
12-MW28	06/26/13	2.0 U	0.50 U	0.50 U	0.50 U	0.77	0.50 U	1.3	1.0 U
12-MW29	12/14/11	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
12-MW29	06/26/13	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U
12-MW30	12/14/11	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
12-MW30	06/26/13	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U
12-MW31	12/09/08	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U
12-MW31	12/01/09	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U
12-MW31	12/06/10	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U
12-MW31	12/15/11	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
12-MW31	12/11/12	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U
SWDA Bayside									
12-MW11	12/14/11	--	--	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--	--	--
12-MW19	12/09/08	2.0 U	0.50 U	0.50 U	0.50 U	0.64	0.50 U	0.50 U	1.0 U
12-MW19	12/01/09	--	--	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--	--	--
SWDA North Point									
12-MW13	12/13/11	--	--	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vinyl Chloride (µg/L)	m- and p-Xylenes (µg/L)	o-Xylene (µg/L)	Xylenes (Total) (µg/L)
Analytical Method		8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	NE	NE	NE
SWDA Westside					
12-MW28	12/14/11	0.5 U	2 U	0.5 U	2 U
12-MW28	06/26/13	0.50 U	2.0 U	0.50 U	2.0 U
12-MW29	12/14/11	0.5 U	2 U	0.5 U	2 U
12-MW29	06/26/13	0.50 U	2.0 U	0.50 U	2.0 U
12-MW30	12/14/11	0.5 U	2 U	0.5 U	2 U
12-MW30	06/26/13	0.50 U	2.0 U	0.50 U	2.0 U
12-MW31	12/09/08	0.50 U	2.0 U	0.50 U	2.0 U
12-MW31	12/01/09	0.50 U	2.0 U	0.50 U	2.0 U
12-MW31	12/06/10	0.50 U	2.0 U	0.50 U	2.0 U
12-MW31	12/15/11	0.5 U	2 U	0.5 U	2 U
12-MW31	12/11/12	0.5 U	2 U	0.5 U	2 U
SWDA Bayside					
12-MW11	12/14/11	--	--	--	--
12-MW17	12/09/08	--	--	--	--
12-MW17	12/01/09	--	--	--	--
12-MW17	12/07/10	--	--	--	--
12-MW17	12/15/11	--	--	--	--
12-MW19	12/09/08	0.50 U	2.0 U	0.50 U	0.26 J
12-MW19	12/01/09	--	--	--	--
12-MW19	12/06/10	--	--	--	--
SWDA North Point					
12-MW13	12/13/11	--	--	--	--
12-MW13	12/12/12	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	TTPH[1] (µg/L)	1,1,1-Trichloro ethane (µg/L)	1,1,2,2-Tetrachloro ethane (µg/L)	1,1,2-Trichloro ethane (µg/L)	1,1-Dichloro ethane (µg/L)
Analytical Method		M8015	M8015	M8015	M8015	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		1400	1400	1400	1400	3120	902	NE	NE
175 Gateview Ave. Petroleum Area									
12-MW05	09/30/08	100 U	1,100	470 U	1,100	--	--	--	--
12-MW05	12/09/08	100 U	730 J	490 UJ	730	--	--	--	--
12-MW05	06/10/09	100 U	930	470 U	930	--	--	--	--
12-MW05	12/01/09	100 U	960	470 U	960	--	--	--	--
12-MW05	06/15/10	100 U	1,400	470 U	1,400	--	--	--	--
12-MW05	12/06/10	100 U	900	470 U	900	--	--	--	--
12-MW05	06/16/11	100 U	960	140 J	1,100	--	--	--	--
12-MW05	12/13/11	17 J	790	540 U	807	--	--	--	--
12-MW05	06/13/12	100 U	810	540 U	810	--	--	--	--
12-MW05	12/12/12	100 U	410	480 U	410	--	--	--	--
12-MW05	06/25/13	12 J	670	520 U	682	--	--	--	--
12-MW05 (dup)	06/25/13	11 J	720	560 U	731	--	--	--	--
12-MW20	09/30/08	100 U	94 U	470 U	94 U	--	--	--	--
12-MW20	12/09/08	100 U	530 J	510 UJ	530	--	--	--	--
12-MW20	06/10/09	100 U	96 U	480 U	96 U	--	--	--	--
12-MW20	12/01/09	29 J	1,700	120 J	1,849	--	--	--	--
12-MW20	06/15/10	100 U	1,100	130 J	1,230	--	--	--	--
12-MW20	12/07/10	100 U	95 U	470 U	95 U	--	--	--	--
12-MW20	06/16/11	100 U	110 U	530 U	110 U	--	--	--	--
12-MW20	12/13/11	100 U	300	520 U	300	--	--	--	--
12-MW20	06/13/12	100 U	510	520 U	510	--	--	--	--
12-MW20	12/12/12	100 U	690	490 U	690	--	--	--	--
12-MW20	06/24/13	100 U	360	520 U	360	--	--	--	--
12-MW21	12/09/08	100 U	520 J	470 UJ	520	--	--	--	--
12-MW21	12/01/09	100 U	610	470 U	610	--	--	--	--
12-MW21	12/06/10	100 U	98 U	470 U	98 U	--	--	--	--
12-MW21	12/15/11	100 U	310	500 U	310	--	--	--	--
12-MW21	12/12/12	100 U	260	520 U	260	--	--	--	--
12-MW22	09/30/08	100 U	670	480 U	670	--	--	--	--
12-MW22	12/10/08	100 U	1,200	490 U	1,200	--	--	--	--
12-MW22	06/10/09	100 U	1,400	110 J	1,510	--	--	--	--
12-MW22	12/02/09	100 U	1,400	480 U	1,400	--	--	--	--
12-MW22	06/15/10	100 U	1,200	470 U	1,200	--	--	--	--
12-MW22	12/07/10	100 U	450	470 U	450	--	--	--	--
12-MW22	06/16/11	100 U	1,800	160 J	1,960	--	--	--	--
12-MW22	12/13/11	100 U	1,600	86 J	1,686	--	--	--	--
12-MW22	06/13/12	100 U	910	510 U	910	--	--	--	--
12-MW22	12/12/12	100 U	320	470 U	320	--	--	--	--
12-MW22	06/25/13	100 U	390	500 U	390	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,1-Dichloro ethene (µg/L)	1,2,3-Trichloro benzene (µg/L)	1,2,4-Trichloro benzene (µg/L)	1,2-Dibromo-3-Chloro propane (µg/L)	1,2-Dichloro benzene (µg/L)	1,2-Dichloro ethane (µg/L)	1,2-Dichloro propane (µg/L)	1,3-Dichloro benzene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		22400	NE	NE	NE	129	11300	3040	129
175 Gateview Ave. Petroleum Are									
12-MW05	09/30/08	--	--	--	--	--	--	--	--
12-MW05	12/09/08	--	--	--	--	--	--	--	--
12-MW05	06/10/09	--	--	--	--	--	--	--	--
12-MW05	12/01/09	--	--	--	--	--	--	--	--
12-MW05	06/15/10	--	--	--	--	--	--	--	--
12-MW05	12/06/10	--	--	--	--	--	--	--	--
12-MW05	06/16/11	--	--	--	--	--	--	--	--
12-MW05	12/13/11	--	--	--	--	--	--	--	--
12-MW05	06/13/12	--	--	--	--	--	--	--	--
12-MW05	12/12/12	--	--	--	--	--	--	--	--
12-MW05	06/25/13	--	--	--	--	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--	--	--	--	--
12-MW20	09/30/08	--	--	--	--	--	--	--	--
12-MW20	12/09/08	--	--	--	--	--	--	--	--
12-MW20	06/10/09	--	--	--	--	--	--	--	--
12-MW20	12/01/09	--	--	--	--	--	--	--	--
12-MW20	06/15/10	--	--	--	--	--	--	--	--
12-MW20	12/07/10	--	--	--	--	--	--	--	--
12-MW20	06/16/11	--	--	--	--	--	--	--	--
12-MW20	12/13/11	--	--	--	--	--	--	--	--
12-MW20	06/13/12	--	--	--	--	--	--	--	--
12-MW20	12/12/12	--	--	--	--	--	--	--	--
12-MW20	06/24/13	--	--	--	--	--	--	--	--
12-MW21	12/09/08	--	--	--	--	--	--	--	--
12-MW21	12/01/09	--	--	--	--	--	--	--	--
12-MW21	12/06/10	--	--	--	--	--	--	--	--
12-MW21	12/15/11	--	--	--	--	--	--	--	--
12-MW21	12/12/12	--	--	--	--	--	--	--	--
12-MW22	09/30/08	--	--	--	--	--	--	--	--
12-MW22	12/10/08	--	--	--	--	--	--	--	--
12-MW22	06/10/09	--	--	--	--	--	--	--	--
12-MW22	12/02/09	--	--	--	--	--	--	--	--
12-MW22	06/15/10	--	--	--	--	--	--	--	--
12-MW22	12/07/10	--	--	--	--	--	--	--	--
12-MW22	06/16/11	--	--	--	--	--	--	--	--
12-MW22	12/13/11	--	--	--	--	--	--	--	--
12-MW22	06/13/12	--	--	--	--	--	--	--	--
12-MW22	12/12/12	--	--	--	--	--	--	--	--
12-MW22	06/25/13	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,4-Dichloro benzene (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-Pentanone (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromo chloro methane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		129	NE	NE	NE	NE	700	6400
175 Gateview Ave. Petroleum Are								
12-MW05	09/30/08	--	--	--	--	--	--	--
12-MW05	12/09/08	--	--	--	--	--	--	--
12-MW05	06/10/09	--	--	--	--	--	--	--
12-MW05	12/01/09	--	--	--	--	--	--	--
12-MW05	06/15/10	--	--	--	--	--	--	--
12-MW05	12/06/10	--	--	--	--	--	--	--
12-MW05	06/16/11	--	--	--	--	--	--	--
12-MW05	12/13/11	--	--	--	--	--	--	--
12-MW05	06/13/12	--	--	--	--	--	--	--
12-MW05	12/12/12	--	--	--	--	--	--	--
12-MW05	06/25/13	--	--	--	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--	--	--	--
12-MW20	09/30/08	--	--	--	--	--	--	--
12-MW20	12/09/08	--	--	--	--	--	--	--
12-MW20	06/10/09	--	--	--	--	--	--	--
12-MW20	12/01/09	--	--	--	--	--	--	--
12-MW20	06/15/10	--	--	--	--	--	--	--
12-MW20	12/07/10	--	--	--	--	--	--	--
12-MW20	06/16/11	--	--	--	--	--	--	--
12-MW20	12/13/11	--	--	--	--	--	--	--
12-MW20	06/13/12	--	--	--	--	--	--	--
12-MW20	12/12/12	--	--	--	--	--	--	--
12-MW20	06/24/13	--	--	--	--	--	--	--
12-MW21	12/09/08	--	--	--	--	--	--	--
12-MW21	12/01/09	--	--	--	--	--	--	--
12-MW21	12/06/10	--	--	--	--	--	--	--
12-MW21	12/15/11	--	--	--	--	--	--	--
12-MW21	12/12/12	--	--	--	--	--	--	--
12-MW22	09/30/08	--	--	--	--	--	--	--
12-MW22	12/10/08	--	--	--	--	--	--	--
12-MW22	06/10/09	--	--	--	--	--	--	--
12-MW22	12/02/09	--	--	--	--	--	--	--
12-MW22	06/15/10	--	--	--	--	--	--	--
12-MW22	12/07/10	--	--	--	--	--	--	--
12-MW22	06/16/11	--	--	--	--	--	--	--
12-MW22	12/13/11	--	--	--	--	--	--	--
12-MW22	06/13/12	--	--	--	--	--	--	--
12-MW22	12/12/12	--	--	--	--	--	--	--
12-MW22	06/25/13	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Bromo dichloro methane (µg/L)	Bromoform (µg/L)	Bromo methane (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetra chloride (µg/L)	Chloro benzene (µg/L)	Chloro ethane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	6400	NE	6400	129	NE
175 Gateview Ave. Petroleum Are								
12-MW05	09/30/08	--	--	--	--	--	--	--
12-MW05	12/09/08	--	--	--	--	--	--	--
12-MW05	06/10/09	--	--	--	--	--	--	--
12-MW05	12/01/09	--	--	--	--	--	--	--
12-MW05	06/15/10	--	--	--	--	--	--	--
12-MW05	12/06/10	--	--	--	--	--	--	--
12-MW05	06/16/11	--	--	--	--	--	--	--
12-MW05	12/13/11	--	--	--	--	--	--	--
12-MW05	06/13/12	--	--	--	--	--	--	--
12-MW05	12/12/12	--	--	--	--	--	--	--
12-MW05	06/25/13	--	--	--	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--	--	--	--
12-MW20	09/30/08	--	--	--	--	--	--	--
12-MW20	12/09/08	--	--	--	--	--	--	--
12-MW20	06/10/09	--	--	--	--	--	--	--
12-MW20	12/01/09	--	--	--	--	--	--	--
12-MW20	06/15/10	--	--	--	--	--	--	--
12-MW20	12/07/10	--	--	--	--	--	--	--
12-MW20	06/16/11	--	--	--	--	--	--	--
12-MW20	12/13/11	--	--	--	--	--	--	--
12-MW20	06/13/12	--	--	--	--	--	--	--
12-MW20	12/12/12	--	--	--	--	--	--	--
12-MW20	06/24/13	--	--	--	--	--	--	--
12-MW21	12/09/08	--	--	--	--	--	--	--
12-MW21	12/01/09	--	--	--	--	--	--	--
12-MW21	12/06/10	--	--	--	--	--	--	--
12-MW21	12/15/11	--	--	--	--	--	--	--
12-MW21	12/12/12	--	--	--	--	--	--	--
12-MW22	09/30/08	--	--	--	--	--	--	--
12-MW22	12/10/08	--	--	--	--	--	--	--
12-MW22	06/10/09	--	--	--	--	--	--	--
12-MW22	12/02/09	--	--	--	--	--	--	--
12-MW22	06/15/10	--	--	--	--	--	--	--
12-MW22	12/07/10	--	--	--	--	--	--	--
12-MW22	06/16/11	--	--	--	--	--	--	--
12-MW22	12/13/11	--	--	--	--	--	--	--
12-MW22	06/13/12	--	--	--	--	--	--	--
12-MW22	12/12/12	--	--	--	--	--	--	--
12-MW22	06/25/13	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chloroform (µg/L)	Chloro methane (µg/L)	Cis-1,2-Dichloro ethene (µg/L)	Cis-1,3-Dichloro propene (µg/L)	Dibromo chloro methane (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	Methyl tert-butyl Ether (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	22400	79	6400	43	NE	8000
175 Gateview Ave. Petroleum Are									
12-MW05	09/30/08	--	--	--	--	--	--	--	--
12-MW05	12/09/08	--	--	--	--	--	--	--	--
12-MW05	06/10/09	--	--	--	--	--	--	--	--
12-MW05	12/01/09	--	--	--	--	--	--	--	--
12-MW05	06/15/10	--	--	--	--	--	--	--	--
12-MW05	12/06/10	--	--	--	--	--	--	--	--
12-MW05	06/16/11	--	--	--	--	--	--	--	--
12-MW05	12/13/11	--	--	--	--	--	--	--	--
12-MW05	06/13/12	--	--	--	--	--	--	--	--
12-MW05	12/12/12	--	--	--	--	--	--	--	--
12-MW05	06/25/13	--	--	--	--	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--	--	--	--	--
12-MW20	09/30/08	--	--	--	--	--	--	--	--
12-MW20	12/09/08	--	--	--	--	--	--	--	--
12-MW20	06/10/09	--	--	--	--	--	--	--	--
12-MW20	12/01/09	--	--	--	--	--	--	--	--
12-MW20	06/15/10	--	--	--	--	--	--	--	--
12-MW20	12/07/10	--	--	--	--	--	--	--	--
12-MW20	06/16/11	--	--	--	--	--	--	--	--
12-MW20	12/13/11	--	--	--	--	--	--	--	--
12-MW20	06/13/12	--	--	--	--	--	--	--	--
12-MW20	12/12/12	--	--	--	--	--	--	--	--
12-MW20	06/24/13	--	--	--	--	--	--	--	--
12-MW21	12/09/08	--	--	--	--	--	--	--	--
12-MW21	12/01/09	--	--	--	--	--	--	--	--
12-MW21	12/06/10	--	--	--	--	--	--	--	--
12-MW21	12/15/11	--	--	--	--	--	--	--	--
12-MW21	12/12/12	--	--	--	--	--	--	--	--
12-MW22	09/30/08	--	--	--	--	--	--	--	--
12-MW22	12/10/08	--	--	--	--	--	--	--	--
12-MW22	06/10/09	--	--	--	--	--	--	--	--
12-MW22	12/02/09	--	--	--	--	--	--	--	--
12-MW22	06/15/10	--	--	--	--	--	--	--	--
12-MW22	12/07/10	--	--	--	--	--	--	--	--
12-MW22	06/16/11	--	--	--	--	--	--	--	--
12-MW22	12/13/11	--	--	--	--	--	--	--	--
12-MW22	06/13/12	--	--	--	--	--	--	--	--
12-MW22	12/12/12	--	--	--	--	--	--	--	--
12-MW22	06/25/13	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methylene Chloride (µg/L)	Styrene (µg/L)	Tetrachloro ethene (µg/L)	Toluene (µg/L)	Trans-1,2-Dichloro ethene (µg/L)	Trans-1,3-Dichloro propene (µg/L)	Trichloro ethene (µg/L)	Vinyl Acetate (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	NE	450	5000	44800	79	200	NE
175 Gateview Ave. Petroleum Are									
12-MW05	09/30/08	--	--	--	--	--	--	--	--
12-MW05	12/09/08	--	--	--	--	--	--	--	--
12-MW05	06/10/09	--	--	--	--	--	--	--	--
12-MW05	12/01/09	--	--	--	--	--	--	--	--
12-MW05	06/15/10	--	--	--	--	--	--	--	--
12-MW05	12/06/10	--	--	--	--	--	--	--	--
12-MW05	06/16/11	--	--	--	--	--	--	--	--
12-MW05	12/13/11	--	--	--	--	--	--	--	--
12-MW05	06/13/12	--	--	--	--	--	--	--	--
12-MW05	12/12/12	--	--	--	--	--	--	--	--
12-MW05	06/25/13	--	--	--	--	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--	--	--	--	--
12-MW20	09/30/08	--	--	--	--	--	--	--	--
12-MW20	12/09/08	--	--	--	--	--	--	--	--
12-MW20	06/10/09	--	--	--	--	--	--	--	--
12-MW20	12/01/09	--	--	--	--	--	--	--	--
12-MW20	06/15/10	--	--	--	--	--	--	--	--
12-MW20	12/07/10	--	--	--	--	--	--	--	--
12-MW20	06/16/11	--	--	--	--	--	--	--	--
12-MW20	12/13/11	--	--	--	--	--	--	--	--
12-MW20	06/13/12	--	--	--	--	--	--	--	--
12-MW20	12/12/12	--	--	--	--	--	--	--	--
12-MW20	06/24/13	--	--	--	--	--	--	--	--
12-MW21	12/09/08	--	--	--	--	--	--	--	--
12-MW21	12/01/09	--	--	--	--	--	--	--	--
12-MW21	12/06/10	--	--	--	--	--	--	--	--
12-MW21	12/15/11	--	--	--	--	--	--	--	--
12-MW21	12/12/12	--	--	--	--	--	--	--	--
12-MW22	09/30/08	--	--	--	--	--	--	--	--
12-MW22	12/10/08	--	--	--	--	--	--	--	--
12-MW22	06/10/09	--	--	--	--	--	--	--	--
12-MW22	12/02/09	--	--	--	--	--	--	--	--
12-MW22	06/15/10	--	--	--	--	--	--	--	--
12-MW22	12/07/10	--	--	--	--	--	--	--	--
12-MW22	06/16/11	--	--	--	--	--	--	--	--
12-MW22	12/13/11	--	--	--	--	--	--	--	--
12-MW22	06/13/12	--	--	--	--	--	--	--	--
12-MW22	12/12/12	--	--	--	--	--	--	--	--
12-MW22	06/25/13	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vinyl Chloride (µg/L)	m- and p-Xylenes (µg/L)	o-Xylene (µg/L)	Xylenes (Total) (µg/L)
Analytical Method		8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	NE	NE	NE
175 Gateview Ave. Petroleum Are					
12-MW05	09/30/08	--	--	--	--
12-MW05	12/09/08	--	--	--	--
12-MW05	06/10/09	--	--	--	--
12-MW05	12/01/09	--	--	--	--
12-MW05	06/15/10	--	--	--	--
12-MW05	12/06/10	--	--	--	--
12-MW05	06/16/11	--	--	--	--
12-MW05	12/13/11	--	--	--	--
12-MW05	06/13/12	--	--	--	--
12-MW05	12/12/12	--	--	--	--
12-MW05	06/25/13	--	--	--	--
12-MW05 (dup)	06/25/13	--	--	--	--
12-MW20	09/30/08	--	--	--	--
12-MW20	12/09/08	--	--	--	--
12-MW20	06/10/09	--	--	--	--
12-MW20	12/01/09	--	--	--	--
12-MW20	06/15/10	--	--	--	--
12-MW20	12/07/10	--	--	--	--
12-MW20	06/16/11	--	--	--	--
12-MW20	12/13/11	--	--	--	--
12-MW20	06/13/12	--	--	--	--
12-MW20	12/12/12	--	--	--	--
12-MW20	06/24/13	--	--	--	--
12-MW21	12/09/08	--	--	--	--
12-MW21	12/01/09	--	--	--	--
12-MW21	12/06/10	--	--	--	--
12-MW21	12/15/11	--	--	--	--
12-MW21	12/12/12	--	--	--	--
12-MW22	09/30/08	--	--	--	--
12-MW22	12/10/08	--	--	--	--
12-MW22	06/10/09	--	--	--	--
12-MW22	12/02/09	--	--	--	--
12-MW22	06/15/10	--	--	--	--
12-MW22	12/07/10	--	--	--	--
12-MW22	06/16/11	--	--	--	--
12-MW22	12/13/11	--	--	--	--
12-MW22	06/13/12	--	--	--	--
12-MW22	12/12/12	--	--	--	--
12-MW22	06/25/13	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	TTPH[1] (µg/L)	1,1,1-Trichloro ethane (µg/L)	1,1,2,2-Tetrachloro ethane (µg/L)	1,1,2-Trichloro ethane (µg/L)	1,1-Dichloro ethane (µg/L)
Analytical Method		M8015	M8015	M8015	M8015	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		1400	1400	1400	1400	3120	902	NE	NE
12-MW23	09/30/08	100 U	1,600	140 J	1,740	--	--	--	--
12-MW23	12/09/08	100 U	530 J	470 UJ	530	--	--	--	--
12-MW23	06/10/09	100 U	720	470 U	720	--	--	--	--
12-MW23	12/01/09	100 U	630	470 U	630	--	--	--	--
12-MW23	06/15/10	100 U	780	470 U	780	--	--	--	--
12-MW23	12/06/10	100 U	720	470 U	720	--	--	--	--
12-MW23	06/16/11	100 U	660	140 J	800	--	--	--	--
12-MW23	12/13/11	100 U	490	530 U	490	--	--	--	--
12-MW23	06/13/12	100 U	520	530 U	520	--	--	--	--
12-MW23	12/12/12	100 U	380	510 U	380	--	--	--	--
12-MW23	06/25/13	100 U	530	540 U	530	--	--	--	--
12-MW24	12/09/08	100 U	520 J	470 UJ	520	--	--	--	--
12-MW24	12/01/09	100 U	760	470 U	760	--	--	--	--
12-MW24	12/06/10	100 U	390	470 U	390	--	--	--	--
12-MW24	12/13/11	100 U	560	500 U	560	--	--	--	--
12-MW24	12/12/12	100 U	270	500 U	270	--	--	--	--
12-MW34	12/10/08	100 U	100	470 U	100	--	--	--	--
12-MW34	12/02/09	100 U	110 J	490 UJ	110	--	--	--	--
12-MW34	12/07/10	100 U	110	470 U	110	--	--	--	--
12-MW34	12/13/11	100 U	120	520 U	120	--	--	--	--
12-MW34	12/12/12	100 U	99 J	510 U	99	--	--	--	--
Mariner Drive Petroleum Area									
12-MW15	--	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,1-Dichloro ethene (µg/L)	1,2,3-Trichloro benzene (µg/L)	1,2,4-Trichloro benzene (µg/L)	1,2-Dibromo-3-Chloro propane (µg/L)	1,2-Dichloro benzene (µg/L)	1,2-Dichloro ethane (µg/L)	1,2-Dichloro propane (µg/L)	1,3-Dichloro benzene (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		22400	NE	NE	NE	129	11300	3040	129
12-MW23	09/30/08	--	--	--	--	--	--	--	--
12-MW23	12/09/08	--	--	--	--	--	--	--	--
12-MW23	06/10/09	--	--	--	--	--	--	--	--
12-MW23	12/01/09	--	--	--	--	--	--	--	--
12-MW23	06/15/10	--	--	--	--	--	--	--	--
12-MW23	12/06/10	--	--	--	--	--	--	--	--
12-MW23	06/16/11	--	--	--	--	--	--	--	--
12-MW23	12/13/11	--	--	--	--	--	--	--	--
12-MW23	06/13/12	--	--	--	--	--	--	--	--
12-MW23	12/12/12	--	--	--	--	--	--	--	--
12-MW23	06/25/13	--	--	--	--	--	--	--	--
12-MW24	12/09/08	--	--	--	--	--	--	--	--
12-MW24	12/01/09	--	--	--	--	--	--	--	--
12-MW24	12/06/10	--	--	--	--	--	--	--	--
12-MW24	12/13/11	--	--	--	--	--	--	--	--
12-MW24	12/12/12	--	--	--	--	--	--	--	--
12-MW34	12/10/08	--	--	--	--	--	--	--	--
12-MW34	12/02/09	--	--	--	--	--	--	--	--
12-MW34	12/07/10	--	--	--	--	--	--	--	--
12-MW34	12/13/11	--	--	--	--	--	--	--	--
12-MW34	12/12/12	--	--	--	--	--	--	--	--
Mariner Drive Petroleum Area									
12-MW15	--	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	1,4-Dichloro benzene (µg/L)	2-Butanone (µg/L)	2-Hexanone (µg/L)	4-Methyl-2-Pentanone (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromo chloro methane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		129	NE	NE	NE	NE	700	6400
12-MW23	09/30/08	--	--	--	--	--	--	--
12-MW23	12/09/08	--	--	--	--	--	--	--
12-MW23	06/10/09	--	--	--	--	--	--	--
12-MW23	12/01/09	--	--	--	--	--	--	--
12-MW23	06/15/10	--	--	--	--	--	--	--
12-MW23	12/06/10	--	--	--	--	--	--	--
12-MW23	06/16/11	--	--	--	--	--	--	--
12-MW23	12/13/11	--	--	--	--	--	--	--
12-MW23	06/13/12	--	--	--	--	--	--	--
12-MW23	12/12/12	--	--	--	--	--	--	--
12-MW23	06/25/13	--	--	--	--	--	--	--
12-MW24	12/09/08	--	--	--	--	--	--	--
12-MW24	12/01/09	--	--	--	--	--	--	--
12-MW24	12/06/10	--	--	--	--	--	--	--
12-MW24	12/13/11	--	--	--	--	--	--	--
12-MW24	12/12/12	--	--	--	--	--	--	--
12-MW34	12/10/08	--	--	--	--	--	--	--
12-MW34	12/02/09	--	--	--	--	--	--	--
12-MW34	12/07/10	--	--	--	--	--	--	--
12-MW34	12/13/11	--	--	--	--	--	--	--
12-MW34	12/12/12	--	--	--	--	--	--	--
Mariner Drive Petroleum Area								
12-MW15	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Bromo dichloro methane (µg/L)	Bromoform (µg/L)	Bromo methane (µg/L)	Carbon Disulfide (µg/L)	Carbon Tetra chloride (µg/L)	Chloro benzene (µg/L)	Chloro ethane (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	6400	NE	6400	129	NE
12-MW23	09/30/08	--	--	--	--	--	--	--
12-MW23	12/09/08	--	--	--	--	--	--	--
12-MW23	06/10/09	--	--	--	--	--	--	--
12-MW23	12/01/09	--	--	--	--	--	--	--
12-MW23	06/15/10	--	--	--	--	--	--	--
12-MW23	12/06/10	--	--	--	--	--	--	--
12-MW23	06/16/11	--	--	--	--	--	--	--
12-MW23	12/13/11	--	--	--	--	--	--	--
12-MW23	06/13/12	--	--	--	--	--	--	--
12-MW23	12/12/12	--	--	--	--	--	--	--
12-MW23	06/25/13	--	--	--	--	--	--	--
12-MW24	12/09/08	--	--	--	--	--	--	--
12-MW24	12/01/09	--	--	--	--	--	--	--
12-MW24	12/06/10	--	--	--	--	--	--	--
12-MW24	12/13/11	--	--	--	--	--	--	--
12-MW24	12/12/12	--	--	--	--	--	--	--
12-MW34	12/10/08	--	--	--	--	--	--	--
12-MW34	12/02/09	--	--	--	--	--	--	--
12-MW34	12/07/10	--	--	--	--	--	--	--
12-MW34	12/13/11	--	--	--	--	--	--	--
12-MW34	12/12/12	--	--	--	--	--	--	--
Mariner Drive Petroleum Area								
12-MW15	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chloroform (µg/L)	Chloro methane (µg/L)	Cis-1,2-Dichloro ethene (µg/L)	Cis-1,3-Dichloro propene (µg/L)	Dibromo chloro methane (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	Methyl tert-butyl Ether (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	6400	22400	79	6400	43	NE	8000
12-MW23	09/30/08	--	--	--	--	--	--	--	--
12-MW23	12/09/08	--	--	--	--	--	--	--	--
12-MW23	06/10/09	--	--	--	--	--	--	--	--
12-MW23	12/01/09	--	--	--	--	--	--	--	--
12-MW23	06/15/10	--	--	--	--	--	--	--	--
12-MW23	12/06/10	--	--	--	--	--	--	--	--
12-MW23	06/16/11	--	--	--	--	--	--	--	--
12-MW23	12/13/11	--	--	--	--	--	--	--	--
12-MW23	06/13/12	--	--	--	--	--	--	--	--
12-MW23	12/12/12	--	--	--	--	--	--	--	--
12-MW23	06/25/13	--	--	--	--	--	--	--	--
12-MW24	12/09/08	--	--	--	--	--	--	--	--
12-MW24	12/01/09	--	--	--	--	--	--	--	--
12-MW24	12/06/10	--	--	--	--	--	--	--	--
12-MW24	12/13/11	--	--	--	--	--	--	--	--
12-MW24	12/12/12	--	--	--	--	--	--	--	--
12-MW34	12/10/08	--	--	--	--	--	--	--	--
12-MW34	12/02/09	--	--	--	--	--	--	--	--
12-MW34	12/07/10	--	--	--	--	--	--	--	--
12-MW34	12/13/11	--	--	--	--	--	--	--	--
12-MW34	12/12/12	--	--	--	--	--	--	--	--
Mariner Drive Petroleum Area									
12-MW15	--	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methylene Chloride (µg/L)	Styrene (µg/L)	Tetrachloro ethene (µg/L)	Toluene (µg/L)	Trans-1,2-Dichloro ethene (µg/L)	Trans-1,3-Dichloro propene (µg/L)	Trichloro ethene (µg/L)	Vinyl Acetate (µg/L)
Analytical Method		8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		6400	NE	450	5000	44800	79	200	NE
12-MW23	09/30/08	--	--	--	--	--	--	--	--
12-MW23	12/09/08	--	--	--	--	--	--	--	--
12-MW23	06/10/09	--	--	--	--	--	--	--	--
12-MW23	12/01/09	--	--	--	--	--	--	--	--
12-MW23	06/15/10	--	--	--	--	--	--	--	--
12-MW23	12/06/10	--	--	--	--	--	--	--	--
12-MW23	06/16/11	--	--	--	--	--	--	--	--
12-MW23	12/13/11	--	--	--	--	--	--	--	--
12-MW23	06/13/12	--	--	--	--	--	--	--	--
12-MW23	12/12/12	--	--	--	--	--	--	--	--
12-MW23	06/25/13	--	--	--	--	--	--	--	--
12-MW24	12/09/08	--	--	--	--	--	--	--	--
12-MW24	12/01/09	--	--	--	--	--	--	--	--
12-MW24	12/06/10	--	--	--	--	--	--	--	--
12-MW24	12/13/11	--	--	--	--	--	--	--	--
12-MW24	12/12/12	--	--	--	--	--	--	--	--
12-MW34	12/10/08	--	--	--	--	--	--	--	--
12-MW34	12/02/09	--	--	--	--	--	--	--	--
12-MW34	12/07/10	--	--	--	--	--	--	--	--
12-MW34	12/13/11	--	--	--	--	--	--	--	--
12-MW34	12/12/12	--	--	--	--	--	--	--	--
Mariner Drive Petroleum Area									
12-MW15	--	--	--	--	--	--	--	--	--
12-MW16	--	--	--	--	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vinyl Chloride (µg/L)	m- and p-Xylenes (µg/L)	o-Xylene (µg/L)	Xylenes (Total) (µg/L)
Analytical Method		8260B	8260B	8260B	8260B
Toxicity Screening Criterion[2]		NE	NE	NE	NE
12-MW23	09/30/08	--	--	--	--
12-MW23	12/09/08	--	--	--	--
12-MW23	06/10/09	--	--	--	--
12-MW23	12/01/09	--	--	--	--
12-MW23	06/15/10	--	--	--	--
12-MW23	12/06/10	--	--	--	--
12-MW23	06/16/11	--	--	--	--
12-MW23	12/13/11	--	--	--	--
12-MW23	06/13/12	--	--	--	--
12-MW23	12/12/12	--	--	--	--
12-MW23	06/25/13	--	--	--	--
12-MW24	12/09/08	--	--	--	--
12-MW24	12/01/09	--	--	--	--
12-MW24	12/06/10	--	--	--	--
12-MW24	12/13/11	--	--	--	--
12-MW24	12/12/12	--	--	--	--
12-MW34	12/10/08	--	--	--	--
12-MW34	12/02/09	--	--	--	--
12-MW34	12/07/10	--	--	--	--
12-MW34	12/13/11	--	--	--	--
12-MW34	12/12/12	--	--	--	--
Mariner Drive Petroleum Area					
12-MW15	--	--	--	--	--
12-MW16	--	--	--	--	--

Table 9. Groundwater Analytical Results - TPH and VOCs
IR Site 12, Naval Station Treasure Island

Notes:

Highlighted data indicates results equal or exceed the toxicity screening criterion

[1]TTPH was calculated based on the sum of reportable concentrations of TPHp, TPHd, and TPHmo

[2]Most stringent value taken from the groundwater screening criteria table in Appendix A of the *Annual Groundwater Status Report: Summary of Groundwater Monitoring at Site 12, August and November 2007 Naval Station Treasure Island San Francisco, California* (PTES 2008).

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting limit and method detection limit
NE - not established
TPHd - total petroleum hydrocarbons in the diesel range (C10 to C24)
TPHg - total petroleum hydrocarbons in the purgeable (gasoline) range (C6 to C10)
TPHmo - total petroleum hydrocarbons in the motor oil range (C24 to C34)
TTPH - total total petroleum hydrocarbons (C6 to C34)
U - validation flag signifying analyte not reported at or above the method detection limit
VOCs - volatile organic compounds

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Aluminum† (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		27	1.7	15	120	0.04	0.27	120000
Toxicity Screening Criterion[2]		NE	NE	36	NE	NE	8.8	NE
SWDA Westside								
12-MW28 (tot.)	12/14/11	500 U	5 U	4.16 J	120	5 U	5 U	303,000
12-MW28 (diss.)	12/14/11	500 U	5 U	3.78 J	116	5 U	5 U	303,000
12-MW28 (tot.)	06/26/13	500 U	5.00 U	4.33 J	186	5.00 U	5.00 U	270,000
12-MW28 (diss.)	06/26/13	500 U	5.00 U	4.32 J	178	5.00 U	5.00 U	267,000
12-MW29 (tot.)	12/14/11	102	1 U	2.46	506	1 U	1 U	92,500
12-MW29 (diss.)	12/14/11	100 U	1 U	2.26	492	1 U	1 U	98,200
12-MW29 (tot.)	06/26/13	33.1 U	1.00 U	3.87	1,250	1.00 U	1.00 U	171,000
12-MW29 (diss.)	06/26/13	61.4 J	1.00 U	3.97	1,240	1.00 U	1.00 U	172,000
12-MW30 (tot.)	12/14/11	31.1 J	1.08	3.88	154	1 U	0.591 J	47,000
12-MW30 (diss.)	12/14/11	100 U	0.934 J	2.53	147	1 U	0.392 J	47,300
12-MW30 (tot.)	06/26/13	68.7 U	1.00 U	4.45	135	1.00 U	1.00 U	54,500
12-MW30 (diss.)	06/26/13	66.2 J	1.00 U	3.88	122	1.00 U	1.00 U	55,400
12-MW31 (tot.)	12/09/08	100 U	0.784 J	1.00 U	54.4	1.00 U	1.00 U	42,900
12-MW31 (tot.)	12/01/09	100 U	0.582 J	1.00 U	71.1	1.00 U	1.00 U	45,400
12-MW31 (tot.)	12/06/10	100 U	1.0 U	1.27	98.5	1.0 U	1.0 U	42,800
12-MW31 (diss.)	12/06/10	100 U	1.0 U	1.14	99.7	1.0 U	1.00 U	42,600
12-MW31 (tot.)	12/15/11	100 U	0.666 J	0.392 J	23.9	1 U	1 U	19,400
12-MW31 (diss.)	12/15/11	100 U	0.667 J	0.373 J	24.4	1 U	1 U	19,400
12-MW31 (tot.)	12/11/12	33.9 J	0.578 J	0.314 J	32.4	1 U	1 U	19,700
12-MW31 (diss.)	12/11/12	100 U	0.552 J	0.262 J	31.4	1 U	1 U	19,200
SWDA Bayside								
12-MW11 (tot.)	12/14/11	500 U	5 U	36.6	47.1	5 U	5 U	173,000
12-MW11 (diss.)	12/14/11	500 U	5 U	36.3	43.1	5 U	5 U	170,000
12-MW11 (tot.)	12/12/12	500 U	5 U	25.2	83.4	5 U	5 U	252,000
12-MW11 (diss.)	12/12/12	500 U	5 U	23.7	79.6	5 U	5 U	256,000
12-MW17 (tot.)	12/09/08	100 U	1.05	19.9	82.2	1.00 U	1.00 U	144,000
12-MW17 (tot.)	12/01/09	500 U	5.00 U	18.4	86.1	5.00 U	5.00 U	159,000
12-MW17 (tot.)	12/07/10	500 U	5.0 U	21	45.4	5.0 U	5.0 U	92,400
12-MW17 (diss.)	12/07/10	500 U	5.0 U	20.6	45.2	5.0 U	5.0 U	91,800
12-MW17 (tot.)	12/15/11	500 U	5 U	23.1	49.8	5 U	5 U	101,000
12-MW17 (diss.)	12/15/11	500 U	5 U	18.5	43.1	5 U	5 U	94,900
12-MW17 (tot.)	12/11/12	33.3 J	3.28	25.9	18.6	1 U	1 U	31,900
12-MW17 (diss.)	12/11/12	100 U	3.25	24.1	15	1 U	1 U	31,700

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron† (µg/L)	Lead (µg/L)	Magnesium† (µg/L)	Manganese† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		0.13	1.4	6.6	200	2	43000	900
Toxicity Screening Criterion[2]		50	NE	3.1	NE	5.6	NE	NE
SWDA Westside								
12-MW28 (tot.)	12/14/11	5 U	1.69 J	5 U	130 J	5 U	328,000	2,470
12-MW28 (diss.)	12/14/11	5 U	1.5 J	5 U	5,000 U	5 U	319,000	2,300
12-MW28 (tot.)	06/26/13	5.00 U	1.84 J	5.00 U	97.9 J	5.00 U	540,000	2,810
12-MW28 (diss.)	06/26/13	5.00 U	1.78 J	5.00 U	65.7 J	5.00 U	465,000	2,750
12-MW29 (tot.)	12/14/11	0.711 J	0.385 J	2.45	3,470	3.74	27,700	190
12-MW29 (diss.)	12/14/11	1 U	0.343 J	1.22	3,050	1 U	28,300	189
12-MW29 (tot.)	06/26/13	0.201 J	0.360 J	0.789 U	6,020	0.392 J	70,100	371
12-MW29 (diss.)	06/26/13	1.00 U	0.376 J	1.08	5,680	1.00 U	73,900	371
12-MW30 (tot.)	12/14/11	1 U	1.33	6.2	1,580	1.04	10,700	1,160
12-MW30 (diss.)	12/14/11	1 U	1.19	1.53	917 J	1 U	11,000	1,050
12-MW30 (tot.)	06/26/13	1.00 U	0.862 J	3.26	952 J	0.134 J	10,900	1,080
12-MW30 (diss.)	06/26/13	1.00 U	0.776 J	2.44	666 J	1.00 U	12,600	899
12-MW31 (tot.)	12/09/08	1.00 U	1.00 U	5.24 U	1,000 U	1.4	7,730	33.4 U
12-MW31 (tot.)	12/01/09	1.00 U	1.00 U	3.71	1,000 U	1.14	10,400	17
12-MW31 (tot.)	12/06/10	1.0 U	0.88 J	3.31	549 J	0.768 J	10,600	1,280
12-MW31 (diss.)	12/06/10	1.0 U	0.896 J	1.28	495 J	1.0 U	10,600	1,300
12-MW31 (tot.)	12/15/11	0.207 J	1 U	3.86	46.9 J	0.564 J	3,700	15
12-MW31 (diss.)	12/15/11	0.277 J	1 U	2.62	1,000 U	0.101 J	3,630	3
12-MW31 (tot.)	12/11/12	0.21 J	1 U	6.84	54.7 J	0.485 J	4,430	17
12-MW31 (diss.)	12/11/12	1 U	1 U	3.1	1,000 U	1 U	4,300	2
SWDA Bayside								
12-MW11 (tot.)	12/14/11	5 U	2.77 J	3.46 J	80.6 J	5 U	368,000	2,680
12-MW11 (diss.)	12/14/11	5 U	2.54 J	5 U	5,000 U	5 U	352,000	2,310
12-MW11 (tot.)	12/12/12	6.18	3.78 J	32.4	271 J	5 U	485,000	3,530
12-MW11 (diss.)	12/12/12	5 U	3.17 J	3.06 J	5,000 U	5 U	492,000	3,210
12-MW17 (tot.)	12/09/08	1.00 U	0.920 J	13.1	869 J	1.00 U	315,000	1,740
12-MW17 (tot.)	12/01/09	5.00 U	5.00 U	13.6	1,160 J	5.00 U	354,000	2,000
12-MW17 (tot.)	12/07/10	5.0 U	5.0 U	3.07 J	5,000 U	5.0 U	181,000	1,040
12-MW17 (diss.)	12/07/10	5.0 U	5.0 U	5.0 U	5,000 U	5.0 U	180,000	1,040
12-MW17 (tot.)	12/15/11	5 U	5 U	9.93	1,200 J	5 U	214,000	1,250
12-MW17 (diss.)	12/15/11	5 U	5 U	5 U	704 J	5 U	186,000	1,040
12-MW17 (tot.)	12/11/12	3.48	0.438 J	19	732 J	0.332 J	64,000	401
12-MW17 (diss.)	12/11/12	1 U	0.346 J	4.06	41.2 J	1 U	64,200	335

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Molybdenum (µg/L)	Nickel (µg/L)	Potassium† (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium† (µg/L)	Thallium (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		6.5	5.8	37000	1.8	2.2	240000	3.4
Toxicity Screening Criterion[2]		NE	8.2	NE	71	0.19	NE	426
SWDA Westside								
12-MW28 (tot.)	12/14/11	10 U	5 U	87,900	5 U	5 U	1,480,000	5 U
12-MW28 (diss.)	12/14/11	2.62 J	5 U	88,000	5 U	5 U	1,490,000	5 U
12-MW28 (tot.)	06/26/13	3.61 J	5.00 U	122,000	5.00 U	5.00 U	3,270,000	5.00 U
12-MW28 (diss.)	06/26/13	3.43 J	5.00 U	116,000	5.00 U	5.00 U	3,050,000	5.00 U
12-MW29 (tot.)	12/14/11	0.885 J	1.23	18,000	1 U	1 U	89,800	1 U
12-MW29 (diss.)	12/14/11	1.03 J	0.811 J	17,700	1 U	1 U	91,500	1 U
12-MW29 (tot.)	06/26/13	1.11 J	0.923 J	27,400	1.00 U	1.00 U	270,000	1.00 U
12-MW29 (diss.)	06/26/13	1.15 J	0.749 J	27,900	1.00 U	1.00 U	285,000	1.00 U
12-MW30 (tot.)	12/14/11	0.814 J	16.2	4,270	1 U	1 U	56,600	1 U
12-MW30 (diss.)	12/14/11	0.797 J	14.8	4,390	1 U	1 U	56,800	1 U
12-MW30 (tot.)	06/26/13	1.07 J	8.90	5,130	1.00 U	1.00 U	46,200	1.00 U
12-MW30 (diss.)	06/26/13	1.03 J	7.36	5,190	1.00 U	1.00 U	47,100	1.00 U
12-MW31 (tot.)	12/09/08	2.00 U	0.545 U	1,090	1.00 U	1.00 U	43,400	1.00 U
12-MW31 (tot.)	12/01/09	2.00 U	1.00 U	1,410	1.00 U	1.00 U	53,500	1.00 U
12-MW31 (tot.)	12/06/10	1.22 J	1.58	2,310	1.0 U	1.0 U	57,400	1.0 U
12-MW31 (diss.)	12/06/10	1.27 J	1.45	2,300	1.0 U	1.0 U	57,400	1.0 U
12-MW31 (tot.)	12/15/11	0.543 J	1 U	717 J	1 U	1 U	15,700	1 U
12-MW31 (diss.)	12/15/11	0.602 J	1 U	724 J	1 U	1 U	15,800	1 U
12-MW31 (tot.)	12/11/12	0.847 J	0.781 J	1,040	1 U	1 U	22,000	1 U
12-MW31 (diss.)	12/11/12	0.839 J	1 U	1,020	1 U	1 U	21,400	1 U
SWDA Bayside								
12-MW11 (tot.)	12/14/11	3.94 J	2.64 J	132,000	5 U	5 U	2,750,000	5 U
12-MW11 (diss.)	12/14/11	5.34 J	5 U	131,000	5 U	5 U	2,640,000	5 U
12-MW11 (tot.)	12/12/12	3.35 J	3.69 J	155,000	5 U	5 U	3,610,000	5 U
12-MW11 (diss.)	12/12/12	3.62 J	5 U	153,000	5 U	5 U	3,560,000	5 U
12-MW17 (tot.)	12/09/08	16.9	2.68 U	143,000	1.00 U	1.00 U	1,000 U	1.00 U
12-MW17 (tot.)	12/01/09	17.5	5.00 U	141,000	5.00 U	5.00 U	3,740,000	5.00 U
12-MW17 (tot.)	12/07/10	19.4	5.0 U	97,400	5.0 UJ	5.0 U	2,210,000	5.0 U
12-MW17 (diss.)	12/07/10	19.5	5.0 U	96,500	5.0 UJ	5.0 U	2,200,000	5.0 U
12-MW17 (tot.)	12/15/11	17.5	3 J	103,000	5 U	5 U	2,530,000	5 U
12-MW17 (diss.)	12/15/11	16.9	5 U	94,200	5 U	5 U	2,360,000	5 U
12-MW17 (tot.)	12/11/12	17.8	5.09	52,100	1 U	1 U	1,120,000	1 U
12-MW17 (diss.)	12/11/12	18.6	2.64	52,200	1 U	1 U	1,130,000	1 U

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)	Radium-226 (pCi/L)
Analytical Method		6020A	6020A	7470A	903.0
Ambient Concentration[1]		4.2	4.4	0.1	NE
Toxicity Screening Criterion[2]		NE	81	0.025	5
SWDA Westside					
12-MW28 (tot.)	12/14/11	3.55 J	100 U	0.2 U	0.57
12-MW28 (diss.)	12/14/11	3.22 J	100 U	0.2 U	--
12-MW28 (tot.)	06/26/13	5.00 U	100 U	0.200 U	0.441 U
12-MW28 (diss.)	06/26/13	5.00 U	100 U	0.200 U	--
12-MW29 (tot.)	12/14/11	0.54 J	25.3	0.2 U	0.18
12-MW29 (diss.)	12/14/11	1 U	20 U	0.2 U	--
12-MW29 (tot.)	06/26/13	1.00 U	20 U	0.200 U	0.467 U
12-MW29 (diss.)	06/26/13	1.00 U	20 U	0.200 U	--
12-MW30 (tot.)	12/14/11	0.603 J	255	0.2 U	0.14
12-MW30 (diss.)	12/14/11	1 U	217	0.2 U	--
12-MW30 (tot.)	06/26/13	1.00 U	56.3 U	0.200 U	0.152 U
12-MW30 (diss.)	06/26/13	1.00 U	53.3	0.200 U	--
12-MW31 (tot.)	12/09/08	1.00 U	19.4 U	0.200 U	0.08 U
12-MW31 (tot.)	12/01/09	1.00 U	16.4 J	0.200 U	0.12 U
12-MW31 (tot.)	12/06/10	1.0 U	11.3	0.2 U	0.004 U
12-MW31 (diss.)	12/06/10	1.0 U	8.38 J	0.2 U	--
12-MW31 (tot.)	12/15/11	1 U	20 U	0.2 U	0.106
12-MW31 (diss.)	12/15/11	1 U	20 U	0.2 U	--
12-MW31 (tot.)	12/11/12	1 U	16.1 J	0.2 U	0.07 U
12-MW31 (diss.)	12/11/12	1 U	20 U	0.2 U	--
SWDA Bayside					
12-MW11 (tot.)	12/14/11	2.91 J	100 U	0.2 U	0.19
12-MW11 (diss.)	12/14/11	2.91 J	100 U	0.2 U	--
12-MW11 (tot.)	12/12/12	5 U	100 U	0.2 U	0.25 U
12-MW11 (diss.)	12/12/12	5 U	100 U	0.2 U	--
12-MW17 (tot.)	12/09/08	0.706 J	9.96 U	0.200 U	--
12-MW17 (tot.)	12/01/09	5.00 U	50.0 U	0.200 U	0.44 J
12-MW17 (tot.)	12/07/10	5.0 U	50.0 UJ	0.2 U	0.31
12-MW17 (diss.)	12/07/10	5.0 U	50.0 UJ	0.2 U	--
12-MW17 (tot.)	12/15/11	5 U	100 U	0.2 U	0.14
12-MW17 (diss.)	12/15/11	5 U	100 U	0.2 U	--
12-MW17 (tot.)	12/11/12	5.2	28.7	0.2 U	0.15 U
12-MW17 (diss.)	12/11/12	4.88	13 J	0.2 U	--

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Aluminum† (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		27	1.7	15	120	0.04	0.27	120000
Toxicity Screening Criterion[2]		NE	NE	36	NE	NE	8.8	NE
12-MW19 (tot.)	12/09/08	100 U	1.00 U	8.71	64	1.00 U	1.00 U	27,700
12-MW19 (tot.)	12/01/09	84.1 J	1.00 U	9.05	53.5	1.00 U	1.00 U	24,700
12-MW19 (tot.)	12/06/10	187	1.0 U	10.4	47.7	1.0 U	1.0 U	24,500
12-MW19 (diss.)	12/06/10	100 U	1.0 U	10.8	42.8	1.0 U	1.0 U	23,800
12-MW19 (tot.)	12/12/12	118	1 U	9.44	47.5	1 U	1 U	25,200
12-MW19 (diss.)	12/12/12	27 J	1 U	9.47	45	1 U	1 U	24,900
SWDA North Point								
12-MW13 (tot.)	12/13/11	500 U	5 U	12.3	120	5 U	5 U	340,000
12-MW13 (diss.)	12/13/11	500 U	5 U	11.9	119	5 U	5 U	339,000
12-MW13 (tot.)	12/12/12	500 U	2.68 J	11.7	118	5 U	5 U	280,000
12-MW13 (diss.)	12/12/12	500 U	5 U	11.3	115	5 U	5 U	283,000
175 Gateview Ave. Petroleum Area								
12-MW05 (tot.)	09/30/08	220	1.00 U	140	35.4	1.00 U	1.00 U	101,000
12-MW05 (tot.)	12/09/08	100 U	1.00 U	134	37.4	1.00 U	1.00 U	101,000
12-MW05 (tot.)	06/10/09	100 U	1.00 U	114	41.4	1.00 U	1.00 U	91,900
12-MW05 (tot.)	12/01/09	100 U	1.00 U	137	33.0	1.00 U	1.00 U	93,800
12-MW05 (tot.)	06/15/10	65 J	1.0 U	119	38.0	1.0 U	1.0 U	86,700
12-MW05 (tot.)	12/06/10	100 U	1.0 U	122	31.7	1.0 U	1.0 U	86,800
12-MW05 (diss.)	12/06/10	100 U	1.0 U	122	30.6	1.0 U	1.0 U	86,600
12-MW05 (tot.)	06/16/11	100 U	1 U	186 J	45.0	1 U	1 U	95,600
12-MW05 (diss.)	06/16/11	100 U	1 U	179	34.4	1 U	1 U	95,100
12-MW05 (tot.)	12/13/11	27.4 J	1 U	133	26.1	1 U	1 U	102,000
12-MW05 (diss.)	12/13/11	54.1 J	1 U	131	24.5	1 U	1 U	101,000
12-MW05 (tot.)	06/13/12	21.6 J	1 U	135	28.3	1 U	1 U	94,000
12-MW05 (diss.)	06/13/12	67.1 J	1 U	128	26.5	1 U	1 U	94,100
12-MW05 (tot.)	12/12/12	100 U	1 U	69.1	26.4	1 U	1 U	90,500
12-MW05 (diss.)	12/12/12	100 U	1 U	65.9	26.0	1 U	1 U	87,700
12-MW05 (tot.)	06/25/13	100 U	1.00 U	132	19.0	1.00 U	1.00 U	78,000
12-MW05 (tot.) (dup)	06/25/13	100 U	1.00 U	133	19.0	1.00 U	1.00 U	77,300
12-MW05 (diss.)	06/25/13	21.3 J	1.00 U	131	18.4	1.00 U	1.00 U	78,500
12-MW05 (diss.) (dup)	06/25/13	100 U	1.00 U	132	17.7	1.00 U	1.00 U	78,000

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron† (µg/L)	Lead (µg/L)	Magnesium† (µg/L)	Manganese† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		0.13	1.4	6.6	200	2	43000	900
Toxicity Screening Criterion[2]		50	NE	3.1	NE	5.6	NE	NE
12-MW19 (tot.)	12/09/08	0.612 U	1.00 U	2.51 U	1,000 U	1.00 U	39,700	192
12-MW19 (tot.)	12/01/09	0.791 J	1.00 U	3.28	229 J	1.00 U	38,700	200
12-MW19 (tot.)	12/06/10	2.36	1.0 U	7.97	314 J	1.02	35,500	177
12-MW19 (diss.)	12/06/10	1.0 U	1.0 U	0.526 J	1,000 U	1.0 U	37,000	170 J
12-MW19 (tot.)	12/12/12	6.55	0.301 J	44	350 J	1.58	38,000	209
12-MW19 (diss.)	12/12/12	0.66 J	1 U	5.09	94.4 J	0.226 J	38,100	207
SWDA North Point								
12-MW13 (tot.)	12/13/11	5 U	1.48 J	5.54	236 J	5 U	380,000	1,140
12-MW13 (diss.)	12/13/11	5 U	1.42 J	5 U	92.3 J	5 U	385,000	1,020
12-MW13 (tot.)	12/12/12	2.5 J	5 U	9.42	158 J	5 U	311,000	445
12-MW13 (diss.)	12/12/12	5 U	5 U	3.59 J	5,000 U	5 U	303,000	303
175 Gateview Ave. Petroleum Area								
12-MW05 (tot.)	09/30/08	1.00 U	1.00 U	1.00 U	14,300	1.00 U	24,000	1,560
12-MW05 (tot.)	12/09/08	1.00 U	1.00 U	1.00 U	11,400	1.00 U	25,900	1,560
12-MW05 (tot.)	06/10/09	1.00 U	1.00 U	1.00 U	9,130	1.00 U	21,600	1,360
12-MW05 (tot.)	12/01/09	1.00 U	1.00 U	1.00 U	10,200	1.00 U	24,000	1,390
12-MW05 (tot.)	06/15/10	1.0 U	1.0 U	1.0 U	9,330	1.0 U	17,600	1,140
12-MW05 (tot.)	12/06/10	1.0 U	1.0 U	1.0 U	8,340	1.0 U	21,000	1,170
12-MW05 (diss.)	12/06/10	1.0 U	1.0 U	1.0 U	8,200	1.00 U	21,000	1,170
12-MW05 (tot.)	06/16/11	1 U	0.348 J	1 U	16,800	1 U	20,900	1,360
12-MW05 (diss.)	06/16/11	1 U	0.346 J	1 U	15,000	1 U	21,000	1,350
12-MW05 (tot.)	12/13/11	1 U	0.284 J	1.12	12,400	1 U	20,600	1,260
12-MW05 (diss.)	12/13/11	1 U	0.281 J	0.548 J	11,800	1 U	21,100	1,240
12-MW05 (tot.)	06/13/12	1 U	1 U	0.825 J	12,300	1 U	19,000	1,200
12-MW05 (diss.)	06/13/12	1 U	1 U	2.53	11,600	1 U	19,300	1,180
12-MW05 (tot.)	12/12/12	1 U	0.224 J	0.648 J	4,960	1 U	18,500	1,120
12-MW05 (diss.)	12/12/12	1 U	1 U	0.846 J	4,640	0.133 J	20,900	1,050
12-MW05 (tot.)	06/25/13	1.00 U	1.00 U	1.00 U	9,730	1.00 U	16,400	983
12-MW05 (tot.) (dup)	06/25/13	1.00 U	1.00 U	1.00 U	9,610	1.00 U	16,300	989
12-MW05 (diss.)	06/25/13	1.00 U	1.00 U	0.646 J	9,400	1.00 U	16,700	979
12-MW05 (diss.) (dup)	06/25/13	1.00 U	1.00 U	1.00 U	9,360	1.00 U	16,700	981

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Molybdenum (µg/L)	Nickel (µg/L)	Potassium† (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium† (µg/L)	Thallium (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		6.5	5.8	37000	1.8	2.2	240000	3.4
Toxicity Screening Criterion[2]		NE	8.2	NE	71	0.19	NE	426
12-MW19 (tot.)	12/09/08	3.99	0.983 U	42,000	1.00 U	1.00 U	592,000	1.00 U
12-MW19 (tot.)	12/01/09	4.32	1.69	43,200	1.00 U	1.00 U	538,000	1.00 U
12-MW19 (tot.)	12/06/10	3.56	2.43	37,800	1.0 U	1.0 U	375,000	1.0 U
12-MW19 (diss.)	12/06/10	4.18	1.4	40,300	1.0 U	1.0 U	379,000	1.0 U
12-MW19 (tot.)	12/12/12	3.09	11.8	40,000	1 U	1 U	335,000	1 U
12-MW19 (diss.)	12/12/12	3.99	2.15	40,800	1 U	1 U	341,000	1 U
SWDA North Point								
12-MW13 (tot.)	12/13/11	8.09 J	5 U	142,000	5 U	5 U	3,380,000	5 U
12-MW13 (diss.)	12/13/11	8.89 J	5 U	145,000	5 U	5 U	3,460,000	5 U
12-MW13 (tot.)	12/12/12	9.74 J	3.3 J	129,000	5 U	5 U	3,240,000	5 U
12-MW13 (diss.)	12/12/12	10.1	5 U	129,000	5 U	5 U	3,280,000	5 U
175 Gateview Ave. Petroleum Area								
12-MW05 (tot.)	09/30/08	1.11 J	0.693 U	22,100	1.00 U	1.00 U	30,800	1.00 U
12-MW05 (tot.)	12/09/08	1.13 J	0.580 U	21,500	1.00 U	1.00 U	33,800	1.00 U
12-MW05 (tot.)	06/10/09	1.15 J	0.762 U	18,300	1.00 U	1.00 U	29,700	1.00 U
12-MW05 (tot.)	12/01/09	1.43 J	0.583 J	20,900	1.00 U	1.00 U	40,800	1.00 U
12-MW05 (tot.)	06/15/10	1.12 J	1.0 U	18,200	1.0 U	1.0 U	27,900	1.0 U
12-MW05 (tot.)	12/06/10	1.34 J	1.0 U	19,500	1.0 U	1.0 U	41,600	1.0 U
12-MW05 (diss.)	12/06/10	1.36 J	1.0 U	20,300	1.0 U	1.0 U	41,500	1.0 U
12-MW05 (tot.)	06/16/11	1.62 J	0.682 J	18,700	1 U	1 UJ	27,500	1 U
12-MW05 (diss.)	06/16/11	1.62 J	0.747 J	18,200	1 U	1 UJ	27,400	1 U
12-MW05 (tot.)	12/13/11	1.17 J	1 U	18,600	1 U	1 U	28,400	1 U
12-MW05 (diss.)	12/13/11	1.17 J	1 U	18,700	1 U	1 U	28,300	1 U
12-MW05 (tot.)	06/13/12	1.24 J	1 U	17,000	1 U	1 U	37,500	1 U
12-MW05 (diss.)	06/13/12	1.23 J	1 U	17,000	1 U	1 U	37,500	1 U
12-MW05 (tot.)	12/12/12	2.33	0.861 J	18,800	1 U	1 U	70,100	1 U
12-MW05 (diss.)	12/12/12	2.29	0.574 J	18,100	1 U	1 U	70,100	1 U
12-MW05 (tot.)	06/25/13	1.20 J	1.00 U	16,400	1.00 U	1.00 U	30,200	1.00 U
12-MW05 (tot.) (dup)	06/25/13	1.23 J	1.00 U	16,400	1.00 U	1.00 U	29,700	1.00 U
12-MW05 (diss.)	06/25/13	1.22 J	1.00 U	16,700	1.00 U	1.00 U	31,200	1.00 U
12-MW05 (diss.) (dup)	06/25/13	1.22 J	0.940 J	16,700	1.00 U	1.00 U	30,300	1.00 U

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)	Radium-226 (pCi/L)
Analytical Method		6020A	6020A	7470A	903.0
Ambient Concentration[1]		4.2	4.4	0.1	NE
Toxicity Screening Criterion[2]		NE	81	0.025	5
12-MW19 (tot.)	12/09/08	1.58	15.2 U	0.200 U	0.07 U
12-MW19 (tot.)	12/01/09	1.07	24.8	0.200 U	0.28 J
12-MW19 (tot.)	12/06/10	1.33	58.7J	0.2 U	0.04 U
12-MW19 (diss.)	12/06/10	0.76 J	5.76 J	0.2 U	--
12-MW19 (tot.)	12/12/12	1.15	150	0.2 U	0.12 U
12-MW19 (diss.)	12/12/12	0.703 J	17.7 J	0.2 U	--
SWDA North Point					
12-MW13 (tot.)	12/13/11	5 U	100 U	0.2 U	0.33 J
12-MW13 (diss.)	12/13/11	5 U	100 U	0.2 U	--
12-MW13 (tot.)	12/12/12	5 U	100 U	0.2 U	0.22 U
12-MW13 (diss.)	12/12/12	5 U	100 U	0.2 U	--
175 Gateview Ave. Petroleum Area					
12-MW05 (tot.)	09/30/08	1.00 U	10.0 U	0.200 U	0.17 U
12-MW05 (tot.)	12/09/08	1.00 U	10.0 U	0.200 U	0.13 U
12-MW05 (tot.)	06/10/09	1.00 U	7.03 U	0.200 U	0.056 U
12-MW05 (tot.)	12/01/09	1.00 U	10.0 U	0.200 U	0.16 U
12-MW05 (tot.)	06/15/10	1.0 U	14.2	0.2 U	0.10 U
12-MW05 (tot.)	12/06/10	1.0 U	10 U	0.2 U	0.13
12-MW05 (diss.)	12/06/10	1.0 U	10 U	0.2 U	--
12-MW05 (tot.)	06/16/11	1 U	2 U	0.2 U	0.2
12-MW05 (diss.)	06/16/11	1 U	20 U	0.2 U	--
12-MW05 (tot.)	12/13/11	1 U	20 U	0.2 U	0.09 U
12-MW05 (diss.)	12/13/11	1 U	20 U	0.2 U	--
12-MW05 (tot.)	06/13/12	1 U	20 U	0.2 U	0.04 U
12-MW05 (diss.)	06/13/12	1 U	20 U	0.2 U	--
12-MW05 (tot.)	12/12/12	1 U	20 U	0.2 U	0.05 U
12-MW05 (diss.)	12/12/12	1 U	20 U	0.2 U	--
12-MW05 (tot.)	06/25/13	1.00 U	20.0 U	0.200 U	0.187 U
12-MW05 (tot.) (dup)	06/25/13	1.00 U	20.0 U	0.200 U	0.0828 U
12-MW05 (diss.)	06/25/13	1.00 U	15.3 J	0.200 U	--
12-MW05 (diss.) (dup)	06/25/13	1.00 U	20.0 U	0.200 U	--

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Aluminum† (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		27	1.7	15	120	0.04	0.27	120000
Toxicity Screening Criterion[2]		NE	NE	36	NE	NE	8.8	NE
12-MW20 (tot.)	09/30/08	100 U	1.00 U	38.6	176	1.00 U	1.00 U	110,000
12-MW20 (tot.)	12/09/08	100 U	1.00 U	77.2	167	1.00 U	1.00 U	109,000
12-MW20 (tot.)	06/10/09	100 U	1.00 U	13.1	117	1.00 U	1.00 U	99,800
12-MW20 (tot.)	12/01/09	59.4 J	1.00 U	109	167	1.00 U	1.00 U	111,000
12-MW20 (tot.)	06/15/10	100 U	1.0 U	98.9	158	1.0 U	1.0 U	91,600
12-MW20 (tot.)	12/07/10	100 U	1.0 U	8.9	133	1.0 U	1.0 U	121,000
12-MW20 (diss.)	12/07/10	100 U	1.0 U	5.27	133	1.0 U	1.0 U	123,000
12-MW20 (tot.)	06/16/11	191	0.595 J	93.5 J	367	1 U	1 U	92,400
12-MW20 (diss.)	06/16/11	100 U	0.518 J	2.07	112	1 U	1 U	91,000
12-MW20 (tot.)	12/13/11	100 U	1 U	45.7	125	1 U	1 U	113,000
12-MW20 (diss.)	12/13/11	100 U	1 U	42.6	122	1 U	1 U	112,000
12-MW20 (tot.)	06/13/12	34.9 J	1 U	73.2	132	1 U	1 U	103,000
12-MW20 (diss.)	06/13/12	24.7 J	1 U	70.2	130	1 U	1 U	101,000
12-MW20 (tot.)	12/12/12	100 U	1 U	27.8	129	1 U	1 U	103,000
12-MW20 (diss.)	12/12/12	100 U	1 U	28.4	129	1 U	1 U	103,000
12-MW20 (tot.)	06/24/13	100 U	1.00 U	85.1	131	1.00 U	1.00 U	99,300
12-MW20 (diss.)	06/24/13	100 U	1.00 U	84.7	130	1.00 U	1.00 U	100,000
12-MW21 (tot.)	12/09/08	100 U	1.00 U	60.3	103	1.00 U	1.00 U	110,000
12-MW21 (tot.)	12/01/09	100 U	1.00 U	35.3	114	1.00 U	1.00 U	118,000
12-MW21 (tot.)	12/06/10	100 U	1.11	1.85	96.1	1.0 U	1.0 U	78,700
12-MW21 (diss.)	12/06/10	100 U	1.17	2.08	97.3	1.0 U	1.0 U	80,500
12-MW21 (tot.)	12/15/11	100 U	1 U	44.7	115	1 U	1 U	104,000
12-MW21 (diss.)	12/15/11	24.3 J	1 U	50	116	1 U	1 U	111,000
12-MW21 (tot.)	12/12/12	44.4 J	1 U	42.3	132	1 U	1 U	115,000
12-MW21 (diss.)	12/12/12	39.1 J	1 U	45.5	129	1 U	1 U	113,000

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron† (µg/L)	Lead (µg/L)	Magnesium† (µg/L)	Manganese† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		0.13	1.4	6.6	200	2	43000	900
Toxicity Screening Criterion[2]		50	NE	3.1	NE	5.6	NE	NE
12-MW20 (tot.)	09/30/08	1.00 U	1.06	2.74	4,350	1.00 U	18,300	1,290
12-MW20 (tot.)	12/09/08	1.00 U	0.992 J	1.00 U	9,490	1.00 U	17,500	1,130
12-MW20 (tot.)	06/10/09	1.00 U	1.00 U	4.34	1,990	1.00 U	17,500	192
12-MW20 (tot.)	12/01/09	0.533 J	0.957 J	1.00 U	10,700	1.00 U	16,400	770
12-MW20 (tot.)	06/15/10	1.0 U	0.831 J	1.0 U	10,500	1.0 U	12,800	598
12-MW20 (tot.)	12/07/10	1.0 U	0.861 J	1.15	1,190	1.0 U	18,200	141
12-MW20 (diss.)	12/07/10	1.0 U	0.896 J	1.01	593	1.0 U	18,600	143
12-MW20 (tot.)	06/16/11	3.34	3.63	14.3	46,300	2.15	13,600	705
12-MW20 (diss.)	06/16/11	1 U	0.623 J	5.12	226 J	1 U	14,200	116
12-MW20 (tot.)	12/13/11	1 U	1.09	1.15	5,610	1 U	14,200	376
12-MW20 (diss.)	12/13/11	1 U	1.07	1.34	5,260	1 U	13,800	358
12-MW20 (tot.)	06/13/12	0.243 J	0.839 J	2.09	5,260	0.222 J	13,400	335
12-MW20 (diss.)	06/13/12	1 U	0.782 J	1.55	4,770	1 U	13,400	337
12-MW20 (tot.)	12/12/12	1 U	1.05	2.25	640 J	1 U	11,100	408
12-MW20 (diss.)	12/12/12	1 U	0.956 J	2.06	499 J	1 U	13,400	393
12-MW20 (tot.)	06/24/13	1.00 U	0.380 J	0.675 J	7,920	1.00 U	14,300	495
12-MW20 (diss.)	06/24/13	1.00 U	0.382 J	0.508 J	7,730	1.00 U	14,300	499
12-MW21 (tot.)	12/09/08	0.893 UJ	1.00 U	1.37 UJ	5,920	1.00 U	14,900	252
12-MW21 (tot.)	12/01/09	0.784 J	1.00 U	2.85	4,280	1.00 U	14,100	187
12-MW21 (tot.)	12/06/10	0.608 J	1.0 U	18.8	1,000 U	1.0 U	7,920	5
12-MW21 (diss.)	12/06/10	1.0 U	0.535 J	16.5	1,000 U	1.0 U	7,940	5.14 J
12-MW21 (tot.)	12/15/11	0.757 J	0.259 J	1.01	3,730	1 U	13,000	196
12-MW21 (diss.)	12/15/11	0.646 J	0.286 J	0.604 J	3,870	0.125 J	14,600	210
12-MW21 (tot.)	12/12/12	0.343 J	0.709 J	4.34	3,140	0.19 J	12,700	289
12-MW21 (diss.)	12/12/12	0.303 J	0.618 J	2.51	3,150	1 U	15,600	281

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Molybdenum (µg/L)	Nickel (µg/L)	Potassium† (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium† (µg/L)	Thallium (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		6.5	5.8	37000	1.8	2.2	240000	3.4
Toxicity Screening Criterion[2]		NE	8.2	NE	71	0.19	NE	426
12-MW20 (tot.)	09/30/08	2.00 U	3.98 U	5,620	1.00 U	1.00 U	15,500	1.00 U
12-MW20 (tot.)	12/09/08	2.00 U	2.48 U	7,900	1.00 U	1.00 U	13,800	1.00 U
12-MW20 (tot.)	06/10/09	2.00 U	2.65 U	3,800	1.00 U	1.00 U	14,100	1.00 U
12-MW20 (tot.)	12/01/09	2.00 U	2.21	7,410	1.00 U	1.00 U	13,300	1.00 U
12-MW20 (tot.)	06/15/10	2.0 U	1.31	8,440	1.0 U	1.0 U	13,400	1.0 U
12-MW20 (tot.)	12/07/10	2.0 U	2.32	3,550	1.0 U	1.0 U	15,200	1.0 U
12-MW20 (diss.)	12/07/10	2.0 U	2.2	3,550	1.0 U	1.0 U	15,600	1.0 U
12-MW20 (tot.)	06/16/11	2.00 U	8.09	3,400	1 U	1 UJ	14,700	1 U
12-MW20 (diss.)	06/16/11	0.740 J	3.29	3,370	1 U	1 UJ	15,600	1 U
12-MW20 (tot.)	12/13/11	0.946 J	2.59	4,410	1 U	1 U	17,400	1 U
12-MW20 (diss.)	12/13/11	0.862 J	2.53	4,510	1 U	1 U	17,400	1 U
12-MW20 (tot.)	06/13/12	0.888 J	1.95	7,060	1 U	1 U	21,200	1 U
12-MW20 (diss.)	06/13/12	0.903 J	2.17	7,220	1 U	1 U	21,600	1 U
12-MW20 (tot.)	12/12/12	0.725 J	2.98	3,840	1 U	1 U	16,500	1 U
12-MW20 (diss.)	12/12/12	0.749 J	3.06	3,980	1 U	1 U	17,100	1 U
12-MW20 (tot.)	06/24/13	0.839 J	1.57	7,830	1.00 U	1.00 U	17,000	1.00 U
12-MW20 (diss.)	06/24/13	0.856 J	1.52	7,960	1.00 U	1.00 U	17,300	1.00 U
12-MW21 (tot.)	12/09/08	2.00 U	1.72 U	7,970	1.00 U	1.00 U	20,300	1.00 U
12-MW21 (tot.)	12/01/09	2.00 U	1.05	8,600	1.00 U	1.00 U	18,600	1.00 U
12-MW21 (tot.)	12/06/10	2.0 U	6.68	3,880	1.0 U	1.0 U	20,400	1.0 U
12-MW21 (diss.)	12/06/10	2.0 U	7.09	3,940	1.0 U	1.0 U	20,700	1.0 U
12-MW21 (tot.)	12/15/11	2 U	1.43	6,280	1 U	1 U	15,500	1 U
12-MW21 (diss.)	12/15/11	2 U	1.12	6,640	1 U	1 U	17,300	1 U
12-MW21 (tot.)	12/12/12	2 U	2.5	6,940	1 U	1 U	18,700	1 U
12-MW21 (diss.)	12/12/12	2 U	2.46	7,210	1 U	1 U	19,300	1 U

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)	Radium-226 (pCi/L)
Analytical Method		6020A	6020A	7470A	903.0
Ambient Concentration[1]		4.2	4.4	0.1	NE
Toxicity Screening Criterion[2]		NE	81	0.025	5
12-MW20 (tot.)	09/30/08	1.87	10.0 U	0.200 U	0.18 U
12-MW20 (tot.)	12/09/08	1.21	10.0 U	0.200 U	0.25 J
12-MW20 (tot.)	06/10/09	0.525 J	6.55 U	0.200 U	0.145 J
12-MW20 (tot.)	12/01/09	1.87	6.00 J	0.200 U	0.32 J
12-MW20 (tot.)	06/15/10	1.0 U	17.5	0.2 U	0.31 J
12-MW20 (tot.)	12/07/10	0.723 J	10 U	0.2 U	0.101
12-MW20 (diss.)	12/07/10	1.0 U	10 U	0.2 U	--
12-MW20 (tot.)	06/16/11	18.6	18.7 J	0.2 U	0.43
12-MW20 (diss.)	06/16/11	1 U	20 U	0.2 U	--
12-MW20 (tot.)	12/13/11	0.983 J	20 U	0.2 U	0.28 J
12-MW20 (diss.)	12/13/11	0.905 J	10.7 J	0.2 U	--
12-MW20 (tot.)	06/13/12	1.14	20 U	0.2 U	0.17 J
12-MW20 (diss.)	06/13/12	0.928 J	16.1 J	0.2 U	--
12-MW20 (tot.)	12/12/12	0.938 J	20 U	0.2 U	0.23 U
12-MW20 (diss.)	12/12/12	0.884 J	20 U	0.2 U	--
12-MW20 (tot.)	06/24/13	0.563 J	20.0 U	0.200 U	0.171 U
12-MW20 (diss.)	06/24/13	1.00 U	20.0 U	0.200 U	--
12-MW21 (tot.)	12/09/08	6.56	10.0 U	0.200 U	0.09 UJ
12-MW21 (tot.)	12/01/09	2.81	12.2	0.200 U	0.10 U
12-MW21 (tot.)	12/06/10	2.4	26.5 J	0.2 U	0.16
12-MW21 (diss.)	12/06/10	2.49	25.7	0.2 U	--
12-MW21 (tot.)	12/15/11	2.71	12.2 J	0.2 U	0.17 J
12-MW21 (diss.)	12/15/11	2.35	13.6 J	0.2 U	--
12-MW21 (tot.)	12/12/12	1.61	31.4	0.2 U	0.12 U
12-MW21 (diss.)	12/12/12	1.39	20.7	0.2 U	--

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Aluminum† (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		27	1.7	15	120	0.04	0.27	120000
Toxicity Screening Criterion[2]		NE	NE	36	NE	NE	8.8	NE
12-MW22 (tot.)	09/30/08	100 U	1.00 U	95.3	64.9	1.00 U	1.00 U	111,000
12-MW22 (tot.)	12/10/08	100 U	1.00 U	91.6	57.3	1.00 U	1.00 U	153,000 J
12-MW22 (tot.)	06/10/09	100 U	1.00 U	94.2	31.4	1.00 U	1.00 U	105,000
12-MW22 (tot.)	12/02/09	100 U	1.00 U	172	42.2	1.00 U	1.00 U	104,000
12-MW22 (tot.)	06/15/10	100 U	1.0 U	63.4	30.5	1.0 U	1.0 U	94,700
12-MW22 (tot.)	12/07/10	100 U	1.0 U	65.3	37.8	1.0 U	1.0 U	98,500
12-MW22 (diss.)	12/07/10	100 U	1.0 U	58.4	37.6	1.0 U	1.0 U	98,700
12-MW22 (tot.)	06/16/11	97.5 J	1 U	138 J	40.7	1 U	1 U	108,000
12-MW22 (diss.)	06/16/11	100 U	1 U	130	37.1	1 U	1 U	111,000
12-MW22 (tot.)	12/13/11	99.4 J	1 U	94.5	36.7	1 U	1 U	120,000
12-MW22 (diss.)	12/13/11	100 U	1 U	86.9	35	1 U	1 U	121,000
12-MW22 (tot.)	06/13/12	41.3 J	1 U	86.6	30.7	1 U	1 U	96,100
12-MW22 (diss.)	06/13/12	32.4 J	1 U	86.3	31.0	1 U	1 U	98,200
12-MW22 (tot.)	12/12/12	53.1 J	1 U	36.6	21	1 U	1 U	69,500
12-MW22 (diss.)	12/12/12	100 U	1 U	34.8	20.3	1 U	1 U	69,900
12-MW22 (tot.)	06/25/13	59.3 J	0.530 J	31.3	49.5	1.00 U	1.00 U	158,000
12-MW22 (diss.)	06/25/13	100 U	0.519 J	28.0	46.5	1.00 U	1.00 U	154,000
12-MW23 (tot.)	09/30/08	100 U	1.00 U	116	70.5	1.00 U	1.00 U	190,000
12-MW23 (tot.)	12/09/08	115	1.00 U	120	58.2	1.00 U	1.00 U	105,000
12-MW23 (tot.)	06/10/09	100 U	1.00 U	81	63	1.00 U	1.00 U	112,000
12-MW23 (tot.)	12/01/09	100 U	1.00 U	68.4	58.1	1.00 U	1.00 U	123,000
12-MW23 (tot.)	06/15/10	56 J	1.0 U	92.9	85.6	1.0 U	1.0 U	113,000
12-MW23 (tot.)	12/06/10	100 U	1.0 U	52.1	50.8	1.0 U	1.0 U	114,000
12-MW23 (diss.)	12/06/10	100 U	1.0 U	35.8	44.6	1.0 U	1.0 U	116,000
12-MW23 (tot.)	06/16/11	100 U	1 U	103 J	69.9	1 U	1 UJ	110,000
12-MW23 (diss.)	06/16/11	100 U	1 U	101	66.6	1 U	1 UJ	113,000
12-MW23 (tot.)	12/13/11	100 U	1 U	52.4	49	1 U	1 U	108,000
12-MW23 (diss.)	12/13/11	36.8 J	1 U	51.8	49.7	1 U	1 U	110,000
12-MW23 (tot.)	06/13/12	26.0 J	1 U	98.2	62.6	1 U	1 U	108,000
12-MW23 (diss.)	06/13/12	23.9 J	1 U	97.1	61.4	1 U	1 U	102,000
12-MW23 (tot.)	12/12/12	39.3 J	1 U	61.3	56.8	1 U	1 U	125,000
12-MW23 (diss.)	12/12/12	39.1 J	1 U	34.2	46.8	1 U	1 U	124,000
12-MW23 (tot.)	06/25/13	100 U	1.00 U	96.1	71.4	1.00 U	1.00 U	117,000
12-MW23 (diss.)	06/25/13	100 U	1.00 U	93.2	69.3	1.00 U	1.00 U	115,000

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron† (µg/L)	Lead (µg/L)	Magnesium† (µg/L)	Manganese† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		0.13	1.4	6.6	200	2	43000	900
Toxicity Screening Criterion[2]		50	NE	3.1	NE	5.6	NE	NE
12-MW22 (tot.)	09/30/08	1.00 U	1.00 U	1.00 U	6,550	1.00 U	26,000	1,510
12-MW22 (tot.)	12/10/08	1.00 U	1.00 U	1.53	20,400	1.00 U	36,500	1,460 J
12-MW22 (tot.)	06/10/09	1.00 U	1.00 U	1.00 U	17,300	1.00 U	24,900	1,170
12-MW22 (tot.)	12/02/09	0.916 J	1.00 U	0.511 J	23,400	1.00 U	24,100	1,340
12-MW22 (tot.)	06/15/10	1.0 U	0.553 J	0.502 J	10,600	1.0 U	19,000	882
12-MW22 (tot.)	12/07/10	1.0 U	1.0 U	1.0 U	8,720	1.0 U	17,800	696
12-MW22 (diss.)	12/07/10	1.0 U	1.0 U	1.0 U	8,470	1.0 U	17,300	699
12-MW22 (tot.)	06/16/11	0.662 U	0.399 J	1.46	21,200	0.291 J	24,400	1,200
12-MW22 (diss.)	06/16/11	0.252 J	0.356 J	1 U	20,500	1 U	25,100	1,210
12-MW22 (tot.)	12/13/11	0.444 J	0.354 J	2.67	18,000	0.355 J	26,200	1,280
12-MW22 (diss.)	12/13/11	0.26 J	0.319 J	0.625 J	17,500	1 U	26,200	1,290
12-MW22 (tot.)	06/13/12	0.231 J	1 U	1.01	9,430	0.123 J	19,000	745
12-MW22 (diss.)	06/13/12	1 U	1 U	1.03	9,200	1 U	20,000	759
12-MW22 (tot.)	12/12/12	0.267 J	1 U	1.77	2,760	0.194 J	8,360	265
12-MW22 (diss.)	12/12/12	1 U	1 U	0.917 J	2,440	1 U	8,250	263
12-MW22 (tot.)	06/25/13	0.260 J	0.244 J	1.79	4,770	0.162 J	20,600	540
12-MW22 (diss.)	06/25/13	1.00 U	0.225 J	1.00 U	4,300	1.00 U	20,000	513
12-MW23 (tot.)	09/30/08	1.00 U	1.00 U	0.847 J	29,600	1.00 U	41,300	1,940
12-MW23 (tot.)	12/09/08	0.522 U	1.00 U	1.50 U	8,610	0.776 J	23,100	1,170
12-MW23 (tot.)	06/10/09	1.00 U	1.00 U	1.00 U	7,040	1.00 U	22,900	1,480
12-MW23 (tot.)	12/01/09	1.00 U	1.00 U	1.00 U	5,690	1.00 U	24,500	1,260
12-MW23 (tot.)	06/15/10	1.0 U	0.618 J	0.508 J	8,670	1.0 U	19,100	1,360
12-MW23 (tot.)	12/06/10	1.0 U	1.0 U	1.05	5,240	1.0 U	20,300	1,150
12-MW23 (diss.)	12/06/10	1.0 U	1.0 U	1.0 U	3,800	1.0 U	20,500	1,170
12-MW23 (tot.)	06/16/11	0.228 UJ	0.393 J	0.893 J	8,550	0.127 J	19,000	1,460
12-MW23 (diss.)	06/16/11	1 UJ	0.388 J	1 U	8,130	1 U	19,300	1,470
12-MW23 (tot.)	12/13/11	1 U	0.284 J	0.771 J	5,020	0.2 J	19,200	1,250
12-MW23 (diss.)	12/13/11	0.286 J	0.293 J	0.997 J	4,830	1 U	20,600	1,370
12-MW23 (tot.)	06/13/12	1 U	1 U	0.710 J	7,000	1 U	18,600	1,500
12-MW23 (diss.)	06/13/12	1 U	1 U	0.894 J	6,550 J	1 U	18,600	1,450
12-MW23 (tot.)	12/12/12	0.213 J	0.353 J	1.86	5,100	0.151 J	20,900	1,170
12-MW23 (diss.)	12/12/12	1 U	0.354 J	1.81	3,090	1 U	20,700	1,150
12-MW23 (tot.)	06/25/13	1.00 U	1.00 U	1.00 U	7,520	1.00 U	21,100	1,660
12-MW23 (diss.)	06/25/13	1.00 U	1.00 U	1.00 U	7,490	0.349 J	21,000	1,640

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Molybdenum (µg/L)	Nickel (µg/L)	Potassium† (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium† (µg/L)	Thallium (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		6.5	5.8	37000	1.8	2.2	240000	3.4
Toxicity Screening Criterion[2]		NE	8.2	NE	71	0.19	NE	426
12-MW22 (tot.)	09/30/08	2.00 U	0.721 U	19,300	1.00 U	1.00 U	47,300	1.00 U
12-MW22 (tot.)	12/10/08	2.00 U	0.688 J	16,800 J	1.00 UJ	1.00 U	145,000	1.00 U
12-MW22 (tot.)	06/10/09	2.00 U	0.663 U	16,700	1.00 U	1.00 U	21,700	1.00 U
12-MW22 (tot.)	12/02/09	2.00 U	0.662 J	16,000	1.00 U	1.00 U	44,100	1.00 U
12-MW22 (tot.)	06/15/10	2.0 U	1.08	15,300	1.0 U	1.0 U	27,900	1.0 U
12-MW22 (tot.)	12/07/10	1.29 J	1.15	13,300	1.0 UJ	1.0 U	38,800	1.0 U
12-MW22 (diss.)	12/07/10	1.3 J	1.2	13,300	1.0 UJ	1.0 U	38,800	1.0 U
12-MW22 (tot.)	06/16/11	0.841 J	1.32	16,600	1 U	1 UJ	16,000	1 U
12-MW22 (diss.)	06/16/11	0.833 J	0.861 J	16,800	1 U	1 UJ	16,600	1 U
12-MW22 (tot.)	12/13/11	2 U	0.782 J	15,200	1 U	1 U	31,200	1 U
12-MW22 (diss.)	12/13/11	0.591 J	0.639 J	16,000	1 U	1 U	31,700	1 U
12-MW22 (tot.)	06/13/12	0.699 J	0.749 J	13,700	1 U	1 U	23,900	1 U
12-MW22 (diss.)	06/13/12	0.748 J	0.607 J	14,100	1 U	1 U	24,400	1 U
12-MW22 (tot.)	12/12/12	1.38 J	1.22	8,150	1 U	1 U	34,500	1 U
12-MW22 (diss.)	12/12/12	1.37 J	1.22	8,290	1 U	1 U	34,600	1 U
12-MW22 (tot.)	06/25/13	0.646 J	1.12	12,400	1.00 U	1.00 U	78,000	1.00 U
12-MW22 (diss.)	06/25/13	0.610 J	0.919 J	12,000	1.00 U	1.00 U	76,000	1.00 U
12-MW23 (tot.)	09/30/08	2.00 U	0.711 U	20,300	1.00 U	1.00 U	173,000	1.00 U
12-MW23 (tot.)	12/09/08	2.00 U	0.976 U	16,300	1.00 U	1.00 U	33,200	1.00 U
12-MW23 (tot.)	06/10/09	2.00 U	0.886 U	16,000	1.00 U	1.00 U	27,200	1.00 U
12-MW23 (tot.)	12/01/09	2.00 U	0.822 J	15,500	1.00 U	1.00 U	26,100	1.00 U
12-MW23 (tot.)	06/15/10	2.0 U	1.04	15,300	1.0 U	1.0 U	26,300	1.0 U
12-MW23 (tot.)	12/06/10	2.0 U	0.718 J	14,100	1.0 U	1.0 U	24,700	1.0 U
12-MW23 (diss.)	12/06/10	2.0 U	0.771 J	14,200	1.0 U	1.0 U	24,800	1.0 U
12-MW23 (tot.)	06/16/11	0.733 J	0.924 J	14,000	1 U	1 UJ	29,300	1 U
12-MW23 (diss.)	06/16/11	0.770 J	0.838 J	14,300	1 U	1 UJ	30,700	1 U
12-MW23 (tot.)	12/13/11	0.541 J	1 U	14,300	1 U	1 U	34,200	1 U
12-MW23 (diss.)	12/13/11	0.643 J	1 U	15,400	1 U	1 U	37,700	1 U
12-MW23 (tot.)	06/13/12	0.919 J	1 U	15,300	1 U	1 U	43,200	1 U
12-MW23 (diss.)	06/13/12	0.916 J	1 U	14,800	1 U	1 U	41,900	1 U
12-MW23 (tot.)	12/12/12	0.998 J	1.6	15,400	1 U	1 U	37,700	1 U
12-MW23 (diss.)	12/12/12	1.02 J	1.47	15,100	1 U	1 U	37,100	1 U
12-MW23 (tot.)	06/25/13	0.692 J	0.647 J	16,300	1.00 U	1.00 U	49,700	1.00 U
12-MW23 (diss.)	06/25/13	0.666 J	1.00 U	16,000	1.00 U	1.00 U	48,700	1.00 U

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)	Radium-226 (pCi/L)
Analytical Method		6020A	6020A	7470A	903.0
Ambient Concentration[1]		4.2	4.4	0.1	NE
Toxicity Screening Criterion[2]		NE	81	0.025	5
12-MW22 (tot.)	09/30/08	1.00 U	10.0 U	0.200 U	0.14 U
12-MW22 (tot.)	12/10/08	0.587 J	6.08 J	0.200 U	0.19 U
12-MW22 (tot.)	06/10/09	1.00 U	10.0 U	0.200 U	0.039 U
12-MW22 (tot.)	12/02/09	1.51	10.0 U	0.200 U	0.17 J
12-MW22 (tot.)	06/15/10	1.0 U	20.5	0.2 U	0.28 J
12-MW22 (tot.)	12/07/10	1.0 U	10 UJ	0.2 U	0.055 U
12-MW22 (diss.)	12/07/10	1.0 U	10 UJ	0.2 U	--
12-MW22 (tot.)	06/16/11	1.05	20 U	0.2 U	0.103
12-MW22 (diss.)	06/16/11	0.686 J	20 U	0.2 U	--
12-MW22 (tot.)	12/13/11	0.776 J	10.1 J	0.2 U	0.25 J
12-MW22 (diss.)	12/13/11	0.522 J	20 U	0.2 U	--
12-MW22 (tot.)	06/13/12	0.540 J	20 U	0.2 U	0.09 U
12-MW22 (diss.)	06/13/12	1 U	20 U	0.2 U	--
12-MW22 (tot.)	12/12/12	0.626 J	12.2 J	0.2 U	0.024 U
12-MW22 (diss.)	12/12/12	0.541 J	20 U	0.2 U	--
12-MW22 (tot.)	06/25/13	0.566 J	20.0 U	0.200 U	0.188 U
12-MW22 (diss.)	06/25/13	1.00 U	20.0 U	0.200 U	--
12-MW23 (tot.)	09/30/08	0.532 J	10.0 U	0.200 U	0.18 U
12-MW23 (tot.)	12/09/08	1.45	12.7 U	0.200 U	0.07 U
12-MW23 (tot.)	06/10/09	1.00 U	10.0 U	0.200 U	0.119 J
12-MW23 (tot.)	12/01/09	1.00 U	10.0 U	0.200 U	0.10 U
12-MW23 (tot.)	06/15/10	1.0 U	9.69	0.2 U	0.12 U
12-MW23 (tot.)	12/06/10	1.0 U	5.27 J	0.2 U	0.08 U
12-MW23 (diss.)	12/06/10	1.0 U	10 U	0.2 U	--
12-MW23 (tot.)	06/16/11	0.608 J	20 U	0.2 U	0.119
12-MW23 (diss.)	06/16/11	0.545 J	20 U	0.2 U	--
12-MW23 (tot.)	12/13/11	1 U	20 U	0.2 U	0.12 U
12-MW23 (diss.)	12/13/11	1 U	20 U	0.2 U	--
12-MW23 (tot.)	06/13/12	1 U	20 U	0.2 U	0.22 J
12-MW23 (diss.)	06/13/12	1 U	20 U	0.2 U	--
12-MW23 (tot.)	12/12/12	1 U	13.2 J	0.2 U	0.22 U
12-MW23 (diss.)	12/12/12	1 U	11.2 J	0.2 U	--
12-MW23 (tot.)	06/25/13	1.00 U	14.2 J	0.200 U	0.160 U
12-MW23 (diss.)	06/25/13	1.00 U	20.0 U	0.200 U	--

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Aluminum† (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		27	1.7	15	120	0.04	0.27	120000
Toxicity Screening Criterion[2]		NE	NE	36	NE	NE	8.8	NE
12-MW24 (tot.)	12/09/08	100 U	1.00 U	90.2	99.7	1.00 U	1.00 U	110,000
12-MW24 (tot.)	12/01/09	100 U	1.00 U	77.6	139	1.00 U	1.00 U	141,000
12-MW24 (tot.)	12/06/10	100 U	1.0 U	60.2	101	1.0 U	1.0 U	124,000
12-MW24 (diss.)	12/06/10	100 U	1.0 U	57.5	101	1.0 U	1.0 U	126,000
12-MW24 (tot.)	12/13/11	20.7 J	1 U	97.7	94.1	1 U	1 U	100,000
12-MW24 (diss.)	12/13/11	83.2 J	1 U	99.9	99.3	1 U	1 U	106,000
12-MW24 (tot.)	12/12/12	100 U	1 U	24.7	96.9	1 U	1 U	134,000
12-MW24 (diss.)	12/12/12	33.4 J	1 U	24.7	91.7	1 U	1 U	128,000
12-MW34 (tot.)	12/10/08	500 U	5.00 U	9.65	200	5.00 U	5.00 U	399,000 J
12-MW34 (tot.)	12/02/09	500 U	5.00 U	16.5	89.8	10.0 U	5.00 U	279,000
12-MW34 (tot.)	12/07/10	1,000 U	10 U	19	97.4	10 U	10 U	287,000
12-MW34 (diss.)	12/07/10	1,000 U	10 U	18.2	96.8	10 U	10 U	291,000
12-MW34 (tot.)	12/13/11	500 U	5 U	17.7	154	5 U	5 U	324,000
12-MW34 (diss.)	12/13/11	500 U	5 U	9.65	140	5 U	5 U	340,000
12-MW34 (tot.)	12/12/12	571	5 U	23.4	49.7	5 U	5 U	211,000
12-MW34 (diss.)	12/12/12	500 U	5 U	14.7	38.4	5 U	5 U	209,000
Mariner Drive Petroleum Area								
12-MW15 (tot.)	12/09/08	100 U	1.00 U	37.8	31.7	1.00 U	1.00 U	102,000
12-MW15 (tot.)	12/01/09	100 U	1.00 U	31.5	28.6	1.00 U	1.00 U	104,000
12-MW15 (tot.)	12/06/10	100 U	1.0 U	26.9	29.3	1.0 U	1.0 U	112,000
12-MW15 (diss.)	12/06/10	100 U	1.0 U	20.7	21.8	1.0 U	1.0 U	110,000
12-MW15 (tot.)	12/14/11	100 U	1 U	25.7	22.9	1 U	1 U	94,300
12-MW15 (diss.)	12/14/11	100 U	1 U	16.2	18.1	1 U	1 U	91,900
12-MW15 (tot.)	12/12/12	100 U	1 U	20.3	16.7	1 U	1 U	102,000
12-MW15 (diss.)	12/12/12	21.5 J	1 U	24.5	21.2	1 U	1 U	101,000
12-MW16 (tot.)	12/09/08	100 U	1.00 U	31	15.4	1.00 U	1.00 U	75,100
12-MW16 (tot.)	12/01/09	100 U	1.00 U	29.4	15.8	1.00 U	1.00 U	67,100
12-MW16 (tot.)	12/06/10	100 U	1.0 U	27.5	15	1.0 U	1.0 U	62,900
12-MW16 (diss.)	12/06/10	100 U	1.0 U	27.6	14.5	1.0 U	1.0 U	61,200
12-MW16 (tot.)	12/14/11	100 U	1 U	25	14	1 U	1 U	63,900
12-MW16 (diss.)	12/14/11	100 U	1 U	25.4	14.3	1 U	1 U	64,400
12-MW16 (tot.)	12/12/12	27 J	1 U	23.1	20.2	1 U	1 U	86,800
12-MW16 (diss.)	12/12/12	100 U	1 U	21.4	18.4	1 U	1 U	86,100

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron† (µg/L)	Lead (µg/L)	Magnesium† (µg/L)	Manganese† (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		0.13	1.4	6.6	200	2	43000	900
Toxicity Screening Criterion[2]		50	NE	3.1	NE	5.6	NE	NE
12-MW24 (tot.)	12/09/08	1.00 U	1.00 U	1.00 U	7,100	1.00 U	16,700	1,340
12-MW24 (tot.)	12/01/09	1.00 U	1.00 U	1.00 U	9,540	1.00 U	13,800	1,040
12-MW24 (tot.)	12/06/10	1.0 U	1.0 U	1.0 U	6,370	1.0 U	10,900	983
12-MW24 (diss.)	12/06/10	1.0 U	1.0 U	1.0 U	5,990	1.0 U	11,100 J	985
12-MW24 (tot.)	12/13/11	0.201 J	0.263 J	0.776 J	8,350	1 U	15,700	1,430
12-MW24 (diss.)	12/13/11	1 U	0.275 J	3.05	8,710	1 U	16,300	1,450
12-MW24 (tot.)	12/12/12	0.238 J	0.438 J	8.47	3,420	1.38	9,650	942
12-MW24 (diss.)	12/12/12	0.204 J	0.355 J	1.63	3,350	1 U	11,100	878
12-MW34 (tot.)	12/10/08	5.00 U	5.00 U	5.00 U	5,000 U	5.00 U	1,120,000	267 J
12-MW34 (tot.)	12/02/09	5.00 U	5.00 U	5.00 U	5,000 U	10.0 U	721,000	119
12-MW34 (tot.)	12/07/10	10 U	10 U	10 U	10,000 U	10 U	805,000	92
12-MW34 (diss.)	12/07/10	10 U	10 U	10 U	10,000 U	10 U	806,000	85
12-MW34 (tot.)	12/13/11	3.24 J	1.24 J	4.3 J	1,790 J	5 U	819,000	227
12-MW34 (diss.)	12/13/11	5 U	1.11 J	5 U	384 J	5 U	832,000	202
12-MW34 (tot.)	12/12/12	8.18	1 J	7.15	3,650 J	0.706 J	565,000	139
12-MW34 (diss.)	12/12/12	5 U	5 U	5 U	5,000 U	5 U	557,000	10
Mariner Drive Petroleum Area								
12-MW15 (tot.)	12/09/08	0.506 U	1.41	0.749 U	5,270	1.00 U	30,400	1,480
12-MW15 (tot.)	12/01/09	1.00 U	2.38	0.519 J	2,790	1.00 U	31,500	2,510
12-MW15 (tot.)	12/06/10	1.0 U	1.57	1.0 U	1,540	1.0 U	46,900	1,890
12-MW15 (diss.)	12/06/10	1.0 U	1.29	1.0 U	226 J	1.0 U	45,400	1,710 J
12-MW15 (tot.)	12/14/11	0.336 J	1.23	0.602 J	2,170	1 U	40,700	1,400
12-MW15 (diss.)	12/14/11	1 U	1.1	0.782 J	319 J	1 U	41,100	1,350
12-MW15 (tot.)	12/12/12	1 U	1.03	1.19	455 J	1 U	37,700	1,180
12-MW15 (diss.)	12/12/12	1 U	1.12	1.64	1,520	0.115 J	42,700	1,260
12-MW16 (tot.)	12/09/08	1.00 U	1.00 U	3.80 U	2,570	1.00 U	23,700	563
12-MW16 (tot.)	12/01/09	1.00 U	1.00 U	1.00 U	2,380	1.00 U	23,400	551
12-MW16 (tot.)	12/06/10	1.0 U	1.0 U	0.903 J	2,230	1.0 U	24,300	517
12-MW16 (diss.)	12/06/10	1.0 U	1.0 U	1.0 U	2,080	1.0 U	23,700	517 J
12-MW16 (tot.)	12/14/11	1 U	0.283 J	1 U	2,180	1 U	26,000	535
12-MW16 (diss.)	12/14/11	1 U	0.246 J	0.842 J	2,210	1 U	27,100	555
12-MW16 (tot.)	12/12/12	1 U	0.298 J	2.79	2,920	0.418 J	30,300	666
12-MW16 (diss.)	12/12/12	1 U	0.289 J	0.754 J	2,430	1 U	31,000	672

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Molybdenum (µg/L)	Nickel (µg/L)	Potassium† (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium† (µg/L)	Thallium (µg/L)
Analytical Method		6020A	6020A	6020A	6020A	6020A	6020A	6020A
Ambient Concentration[1]		6.5	5.8	37000	1.8	2.2	240000	3.4
Toxicity Screening Criterion[2]		NE	8.2	NE	71	0.19	NE	426
12-MW24 (tot.)	12/09/08	2.00 U	0.950 U	11,300	1.00 U	1.00 U	18,600	1.00 U
12-MW24 (tot.)	12/01/09	2.00 U	1.15	6,350	1.00 U	1.00 U	23,200	1.00 U
12-MW24 (tot.)	12/06/10	2.0 U	1.41	5,720	1.0 U	1.0 U	21,500	1.0 U
12-MW24 (diss.)	12/06/10	2.0 U	1.57	5,620	1.0 U	1.0 U	21,600	1.0 U
12-MW24 (tot.)	12/13/11	0.846 J	0.713 J	14,000	1 U	1 U	41,300	1 U
12-MW24 (diss.)	12/13/11	0.827 J	0.569 J	14,700	1 U	1 U	43,700	1 U
12-MW24 (tot.)	12/12/12	0.799 J	2.44	5,370	1 U	1 U	25,400	1 U
12-MW24 (diss.)	12/12/12	0.777 J	2.52	5,240	1 U	1 U	24,200	1 U
12-MW34 (tot.)	12/10/08	10.0 U	5.00 U	311,000 J	5.00 UJ	5.00 U	8,580,000	5.00 U
12-MW34 (tot.)	12/02/09	10.0 U	5.00 U	239,000	5.00 U	5.00 U	6,470,000	10.0 U
12-MW34 (tot.)	12/07/10	20 U	10 U	262,000	10 UJ	10 U	6,890,000	10 U
12-MW34 (diss.)	12/07/10	20 U	10 U	264,000	10 UJ	10 U	6,800,000	10 U
12-MW34 (tot.)	12/13/11	2.55 J	5 U	224,000	5 U	5 U	6,260,000	5 U
12-MW34 (diss.)	12/13/11	10 U	5 U	237,000	5 U	5 U	6,610,000	5 U
12-MW34 (tot.)	12/12/12	4.57 J	2.96 J	187,000	5 U	5 U	4,090,000	5 U
12-MW34 (diss.)	12/12/12	4.4 J	5 U	184,000	5 U	5 U	4,070,000	5 U
Mariner Drive Petroleum Area								
12-MW15 (tot.)	12/09/08	1.54 J	3.35 U	7,320	1.00 U	1.00 U	23,300	1.00 U
12-MW15 (tot.)	12/01/09	1.86 J	4.35	8,260	1.00 U	1.00 U	50,100	1.00 U
12-MW15 (tot.)	12/06/10	1.52 J	2.54	14,100	1.0 U	1.0 U	54,500	1.0 U
12-MW15 (diss.)	12/06/10	1.73 J	2.31	13,700	1.0 U	1.0 U	53,800	1.0 U
12-MW15 (tot.)	12/14/11	2.22	2.52	14,300	1 U	1 U	57,200	1 U
12-MW15 (diss.)	12/14/11	2.01	2.38	13,500	1 U	1 U	55,800	1 U
12-MW15 (tot.)	12/12/12	1.91 J	2.16	13,100	1 U	1 U	65,400	1 U
12-MW15 (diss.)	12/12/12	1.78 J	2.55	13,100	1 U	1 U	66,100	1 U
12-MW16 (tot.)	12/09/08	2.22	1.00 U	16,300	1.00 U	1.00 U	45,700	1.00 U
12-MW16 (tot.)	12/01/09	2.53	0.894 J	17,000	1.00 U	1.00 U	48,800	1.00 U
12-MW16 (tot.)	12/06/10	2.84	0.637 J	18,100	1.0 U	1.0 U	51,300	1.0 U
12-MW16 (diss.)	12/06/10	2.84	0.577 J	17,900	1.0 U	1.0 U	50,000	1.0 U
12-MW16 (tot.)	12/14/11	2.41	1 U	19,100	1 U	1 U	53,200	1 U
12-MW16 (diss.)	12/14/11	2.49	0.561 J	18,700	1 U	1 U	54,400	1 U
12-MW16 (tot.)	12/12/12	1.6 J	1.62	17,000	1 U	1 U	33,100	1 U
12-MW16 (diss.)	12/12/12	1.67 J	0.764 J	17,800	1 U	1 U	34,300	1 U

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)	Radium-226 (pCi/L)
Analytical Method		6020A	6020A	7470A	903.0
Ambient Concentration[1]		4.2	4.4	0.1	NE
Toxicity Screening Criterion[2]		NE	81	0.025	5
12-MW24 (tot.)	12/09/08	1.21	10.0 U	0.200 U	0.002 U
12-MW24 (tot.)	12/01/09	2.35	7.68 J	0.200 U	0.19 J
12-MW24 (tot.)	12/06/10	1.47	10 U	0.2 U	0.087
12-MW24 (diss.)	12/06/10	1.32	10 U	0.2 U	--
12-MW24 (tot.)	12/13/11	1.15	20 U	0.2 U	0.21 J
12-MW24 (diss.)	12/13/11	1.18	20 U	0.2 U	--
12-MW24 (tot.)	12/12/12	1.23	13.9 J	0.2 U	0.11 U
12-MW24 (diss.)	12/12/12	1.14	20 U	0.2 U	--
12-MW34 (tot.)	12/10/08	5.00 U	50.0 U	0.200 U	0.30 J
12-MW34 (tot.)	12/02/09	5.98	50.0 U	0.200 U	0.44 J
12-MW34 (tot.)	12/07/10	10 U	100 UJ	0.2 U	0.42
12-MW34 (diss.)	12/07/10	10 U	100 UJ	0.2 U	--
12-MW34 (tot.)	12/13/11	4.29 J	100 U	0.2 U	0.49 J
12-MW34 (diss.)	12/13/11	5 U	60.3 J	0.2 U	--
12-MW34 (tot.)	12/12/12	8.97	100 U	0.2 U	0.18 U
12-MW34 (diss.)	12/12/12	4.2 J	100 U	0.2 U	--
Mariner Drive Petroleum Area					
12-MW15 (tot.)	12/09/08	1.89	10.0 U	0.200 U	0.07 U
12-MW15 (tot.)	12/01/09	1.01	6.31 J	0.200 U	0.34 J
12-MW15 (tot.)	12/06/10	0.809 J	10 U	0.20 U	0.063 U
12-MW15 (diss.)	12/06/10	1.0 U	10 U	0.20 U	--
12-MW15 (tot.)	12/14/11	0.682 J	20 U	0.2 U	0.08 U
12-MW15 (diss.)	12/14/11	1 U	20 U	0.2 U	--
12-MW15 (tot.)	12/12/12	0.587 J	20 U	0.2 U	-0.017 U
12-MW15 (diss.)	12/12/12	0.855 J	10.3 J	0.2 U	--
12-MW16 (tot.)	12/09/08	1.00 U	13.0 U	0.200 U	--
12-MW16 (tot.)	12/01/09	1.00 U	15.8	0.200 U	0.12 U
12-MW16 (tot.)	12/06/10	1.0 U	12.8	0.2 U	0.051 U
12-MW16 (diss.)	12/06/10	1.0 U	5.86 J	0.2 U	--
12-MW16 (tot.)	12/14/11	1 U	20 U	0.2 U	0.07 U
12-MW16 (diss.)	12/14/11	1 U	20 U	0.2 U	--
12-MW16 (tot.)	12/12/12	1 U	26.2	0.2 U	0.05 U
12-MW16 (diss.)	12/12/12	1 U	20 U	0.2 U	--

Table 10. Groundwater Analytical Results - Total and Dissolved Metals and Radium 226
IR Site 12, Naval Station Treasure Island

Notes:

Highlighted data indicates results for CAM17/priority pollutant metals equal or exceed the higher of the toxicity screening criterion or the ambient concentration

[1]Ambient metals concentrations are based on samples collected using the low-flow purge and sample method and were not field filtered and are comparable to the total metals results reported in this table. Ambient metals concentrations are presented in the *Final Technical Memorandum, Estimation of Ambient Concentrations of Metals in Groundwater, Naval Station Treasure Island, San Francisco, California* (Tetra Tech 2001).

[2]Most stringent value taken from the groundwater screening criteria table in Appendix A of the *Annual Groundwater Status Report: Summary of Groundwater Monitoring at Site 12, August and November 2007 Naval Station Treasure Island San Francisco, California* (PTES 2008).

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
† - analyte is not an EPA priority pollutant or CAM 17 metal
diss. - dissolved metals; sample was field filtered
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting limit and method detection limit
NE - not established
pCi/L - picocuries per liter
tot. - total metals; sample was not field filtered
U - validation flag signifying analyte not reported at or above the method detection limit

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Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as Nitrogen (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	300.0	353.3
SWDA Westside							
12-MW28	12/14/11	--	--	--	--	--	--
12-MW28	06/26/13	--	--	--	--	--	--
12-MW29	12/14/11	--	--	--	--	--	--
12-MW29	06/26/13	--	--	--	--	--	--
12-MW30	12/14/11	--	--	--	--	--	--
12-MW30	06/26/13	--	--	--	--	--	--
12-MW31	12/09/08	--	--	--	--	--	--
12-MW31	12/01/09	--	--	--	--	--	--
12-MW31	12/06/10	--	--	--	--	--	--
12-MW31	12/15/11	--	--	--	--	--	--
12-MW31	12/11/12	--	--	--	--	--	--
SWDA Bayside							
12-MW11	12/14/11	--	--	--	--	--	--
12-MW11	12/12/12	--	--	--	--	--	--
12-MW17	12/09/08	--	--	--	--	--	--
12-MW17	12/01/09	--	--	--	--	--	--
12-MW17	12/07/10	--	--	--	--	--	--
12-MW17	12/15/11	--	--	--	--	--	--
12-MW17	12/11/12	--	--	--	--	--	--
12-MW19	12/09/08	--	--	--	--	--	--
12-MW19	12/01/09	--	--	--	--	--	--
12-MW19	12/06/10	--	--	--	--	--	--
12-MW19	12/12/12	--	--	--	--	--	--
SWDA North Point							
12-MW13	12/13/11	--	--	--	--	--	--
12-MW13	12/12/12	--	--	--	--	--	--

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Sulfide (mg/L)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
Analytical Method		376.1	160.1	160.2	Kit	Kit	Kit
SWDA Westside							
12-MW28	12/14/11	--	6,130	11	--	--	--
12-MW28	06/26/13	--	11,600	10 U	--	--	--
12-MW29	12/14/11	--	630	15	--	--	--
12-MW29	06/26/13	--	1,730	10 U	--	--	--
12-MW30	12/14/11	--	333	10 U	--	--	--
12-MW30	06/26/13	--	380	10 U	--	--	--
12-MW31	12/09/08	--	445	10.0 U	--	--	--
12-MW31	12/01/09	--	400	10.0 U	--	--	--
12-MW31	12/06/10	--	323	10 U	--	--	--
12-MW31	12/15/11	--	102	10 U	--	--	--
12-MW31	12/11/12	--	147	10 U	--	--	--
SWDA Bayside							
12-MW11	12/14/11	--	9,580	10	--	--	--
12-MW11	12/12/12	--	13,300	10 U	--	--	--
12-MW17	12/09/08	--	11,600	81	--	--	--
12-MW17	12/01/09	--	13,500	24	--	--	--
12-MW17	12/07/10	--	7,900	10 U	--	--	--
12-MW17	12/15/11	--	8,460	10 U	--	--	--
12-MW17	12/11/12	--	3,590	10 U	--	--	--
12-MW19	12/09/08	--	1,720	19	--	--	--
12-MW19	12/01/09	--	1,730	10.0 U	--	--	--
12-MW19	12/06/10	--	1,270	10 U	--	--	--
12-MW19	12/12/12	--	1,240	21	--	--	--
SWDA North Point							
12-MW13	12/13/11	--	12,600	10	--	--	--
12-MW13	12/12/12	--	11,200	10 U	--	--	--

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as Nitrogen (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	300.0	353.3
175 Gateview Ave. Petroleum Area							
12-MW05	09/30/08	4,200	1.1 J	5.0 U	56.3	0.697	0.26
12-MW05	12/09/08	3,900	1.4 J	5.0 U	94.3	0.885 U	0.100 U
12-MW05	06/10/09	2,800	1.0 J	5.0 U	50.3	0.325 J	0.100 U
12-MW05	12/01/09	3,500	1.5 J	5.0 U	55.5	0.500 U	1.33
12-MW05	06/15/10	6,800	1.1 J	5.0 U	39.8	0.327	0.1 U
12-MW05	12/06/10	4,200	1.7 J	5.0 U	71.3	0.422 J	0.1 U
12-MW05	06/16/11	4,700	0.68 J	5 U	32.2	0.56 U	0.1 U
12-MW05	12/13/11	4,800	1.1 J	5 U	61.5	0.263 J	0.1 U
12-MW05	06/13/12	8,200	1.0 J	5 U	40.5	0.50 U	0.0459 J
12-MW05	12/12/12	2,800	0.87 J	5 U	121	12	0.1 U
12-MW05	06/25/13	8,400	1.2 J	5.0 U	29.0	0.504	0.1 U
12-MW05 (dup)	06/25/13	8,800	1.1 J	5.0 U	28.5	0.282 J	0.1 U
12-MW20	09/30/08	20	5.0 U	5.0 U	28.8	15	0.100 U
12-MW20	12/09/08	7,800	5.0 U	5.0 U	25.4	0.988 U	0.100 U
12-MW20	06/10/09	65	5.0 U	5.0 U	14.1	25.4	0.100 U
12-MW20	12/01/09	11,000	5.0 U	5.0 U	17.6	0.500 U	0.336
12-MW20	06/15/10	6,800	5.0 U	5.0 U	21.7	0.255 J	0.1 U
12-MW20	12/07/10	540	5.0 U	5.0 U	14.4	8.53	0.1 U
12-MW20	06/16/11	3.3 J	5 U	5 U	17.5	17.7	0.403
12-MW20	12/13/11	3,300	5 U	5 U	23.7	2.01	0.1 U
12-MW20	06/13/12	7,100	5 U	5 U	21.5	1.05	0.0367 J
12-MW20	12/12/12	10,000	5 U	5 U	17.5	0.304 J	0.1 U
12-MW20	06/24/13	5,900	5.0 U	5.0 U	22.9	1.19	0.1 U
12-MW21	12/09/08	6,100	5.0 U	5.0 U	22.6	1.20 U	1.68 J
12-MW21	12/01/09	4,600	5.0 U	5.0 U	21	1.31	0.128
12-MW21	12/06/10	16	5.0 U	5.0 U	8.45	8.82	0.123
12-MW21	12/15/11	3,600	5 U	5 U	19.2	0.535	0.1 U
12-MW21	12/12/12	3,800	5 U	5 U	20.2	2.64	0.1 U

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Sulfide (mg/L)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
Analytical Method		376.1	160.1	160.2	Kit	Kit	Kit
175 Gateview Ave. Petroleum Are							
12-MW05	09/30/08	2.00 U	530	20	460	3.4	2.3
12-MW05	12/09/08	2.00 U	610	34	473	9.80	1.68
12-MW05	06/10/09	2.00 U	475	16	430	5.45	1.55
12-MW05	12/01/09	2.00 U	555	16	372	8.60	1.40
12-MW05	06/15/10	2.0 U	473	16	350	6.95	1.36
12-MW05	12/06/10	2.0 U	465	20	389	10.4	1.32
12-MW05	06/16/11	2 U	474	41	413	7.21	0.800
12-MW05	12/13/11	2 U	528	30	385	7.10	1.16
12-MW05	06/13/12	2 U	480	24	352	5.55	0.815
12-MW05	12/12/12	1 U	576	10 U	261	8.80	1.25
12-MW05	06/25/13	1 U	432	16	296	1.42	1.21
12-MW05 (dup)	06/25/13	1 U	420	16	--	--	--
12-MW20	09/30/08	2.00 U	485	30	310	3	1.37
12-MW20	12/09/08	2.00 U	550	30	382	1.4	0.93
12-MW20	06/10/09	2.00 U	385	10.0 U	315	0.58	0.16
12-MW20	12/01/09	2.00 U	522	22	343	9.3	1.02
12-MW20	06/15/10	2.0 U	423	14	331	7.6	0.700
12-MW20	12/07/10	2.0 U	461	10 U	420	0.49	0.193
12-MW20	06/16/11	2 U	372	128	338	8.02	0.671
12-MW20	12/13/11	2 U	433	15	331	8.15	1.06
12-MW20	06/13/12	2 U	422	13	395	2.8	0.490
12-MW20	12/12/12	1 U	422	10 U	268	7.25	0.540
12-MW20	06/24/13	--	392	16	290	6.3	0.016
12-MW21	12/09/08	2.00 UJ	565	26	399	4.3	0.340
12-MW21	12/01/09	2.00 U	534	10.0 U	371	3	0.200
12-MW21	12/06/10	2.0 U	315	18	292	0.12	0.155
12-MW21	12/15/11	2 U	399	10 U	299	1.3	0.200
12-MW21	12/12/12	1 U	440	10 U	261	0.9	0.370

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as Nitrogen (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	300.0	353.3
12-MW22	09/30/08	4,500	4.7 J	5.0 U	115	3.51	0.100 U
12-MW22	12/10/08	8,300	5.0 U	5.0 U	340 J	1.85	0.0602 J
12-MW22	06/10/09	8,500	5.0 U	5.0 U	27.5	2.82	0.100 U
12-MW22	12/02/09	8,000	5.0 U	5.0 U	84.4	0.500 U	0.100 U
12-MW22	06/15/10	2,800	5.0 U	5.0 U	29.4	12.2	0.1 U
12-MW22	12/07/10	490	5.0 U	5.0 U	55.3	22.1	0.1 U
12-MW22	06/16/11	9,200	5 U	5 U	21.9	0.935 U	0.0233 U
12-MW22	12/13/11	6,500	0.93 J	5 U	84.7	0.383 J	0.1 U
12-MW22	06/13/12	6,000	5 U	5 U	28	0.302 J	0.0354 J
12-MW22	12/12/12	1,700	5 U	5 U	29.8	6.29	0.105
12-MW22	06/25/13	2,100	5.0 U	5.0 U	263	17.1	0.1 U
12-MW23	09/30/08	9,300	5.0 U	5.0 U	440	4.03	0.197
12-MW23	12/09/08	1,800	1.9 J	5.0 U	48.1	1.45	0.0774 J
12-MW23	06/10/09	4,900	2.8 J	5.0 U	51.3	1.33	0.100 U
12-MW23	12/01/09	1,800	2.4 J	5.0 U	41.8	0.396 J	0.100 U
12-MW23	06/15/10	5,400	2.9 J	5.0 U	44.3	0.597	0.1 U
12-MW23	12/06/10	3,800	2.4 J	5.0 U	38.3	0.564	0.1 U
12-MW23	06/16/11	4,500	1.8 J	5 U	46.4	0.429 U	0.1 U
12-MW23	12/13/11	3,800	2.2 J	5 U	52.6	0.79	0.1 U
12-MW23	06/13/12	4,100	1.8 J	5 U	50	2.31	0.0340 J
12-MW23	12/12/12	3,200	1.2 J	5 U	68.4	5.26	0.1 U
12-MW23	06/25/13	6,100	2.1 J	5.0 U	71.9	1.19	0.1 U
12-MW24	12/09/08	3,900	4.4 J	5.0 U	28.5	1.99	0.0758 J
12-MW24	12/01/09	9,800	5.2	5.0 U	37.5	2.18	0.100 U
12-MW24	12/06/10	3,500	1.9 J	5.0 U	43.2	4.02	0.1 U
12-MW24	12/13/11	3,500	1.2 J	5 U	49.3	2.93	0.111 J
12-MW24	12/12/12	2,600	1.3 J	5 U	39.8	13.7	0.1 U
12-MW34	12/10/08	260	5.0 U	5.0 U	16,300 J	2,170	0.138
12-MW34	12/02/09	310	5.0 U	5.0 U	12,800	1,470	0.18
12-MW34	12/07/10	160	5.0 U	5.0 U	12,400	1,560	0.496
12-MW34	12/13/11	290	5 U	5 U	13,900	1,850	0.211
12-MW34	12/12/12	7.9	5 U	5 U	9,270	1,010	0.346

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Sulfide (mg/L)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
Analytical Method		376.1	160.1	160.2	Kit	Kit	Kit
12-MW22	09/30/08	2.00 U	615	15	400	17.6	1.97
12-MW22	12/10/08	2.00 U	1,140	56	484	16.9	1.47
12-MW22	06/10/09	2.00 U	475	37	445	7.60	1.45
12-MW22	12/02/09	2.00 U	605	36	410	15.8	2.51
12-MW22	06/15/10	2.0 U	487	12	338	7.40	1.05
12-MW22	12/07/10	2.0 U	448	10	370	4.80	19.5
12-MW22	06/16/11	2 U	505	32	428	5.25	0.800
12-MW22	12/13/11	2 U	602	57	385	5.30	1.80
12-MW22	06/13/12	2 U	443	29	327	6.00	0.950
12-MW22	12/12/12	1 U	412	10 U	222	6.60	0.395
12-MW22	06/25/13	1 U	820	10 U	296	2.14	0.590
12-MW23	09/30/08	2.00 U	1,330	68	328	2.90	1.47
12-MW23	12/09/08	2.00 U	575	61	404	2.70	1.29
12-MW23	06/10/09	2.00 U	495	10.0 U	420	7.00	1.65
12-MW23	12/01/09	2.00 U	615	10.0 U	374	3.90	1.39
12-MW23	06/15/10	2.0 U	548	14	383	5.25	1.61
12-MW23	12/06/10	2.0 U	498	10 U	450	4.45	1.30
12-MW23	06/16/11	2 U	504	19	554	5.65	1.87
12-MW23	12/13/11	2 U	538	11	269	6.55	1.55
12-MW23	06/13/12	2 U	530	11	351	5.30	1.81
12-MW23	12/12/12	1 U	584	11	304	5.15	1.43
12-MW23	06/25/13	1 U	564	14	361	2.20	1.95
12-MW24	12/09/08	2.00 U	575	24	380	4.40	1.64
12-MW24	12/01/09	2.00 U	568	12	386	7.90	1.96
12-MW24	12/06/10	2.0 U	476	14	394	6.10	1.06
12-MW24	12/13/11	2 U	500	20	349	6.75	1.06
12-MW24	12/12/12	1 U	533	10 U	308	5.90	1.11
12-MW34	12/10/08	4	30,000	147	--	--	--
12-MW34	12/02/09	2.00 U	21,800	45	381	0.35	0.209
12-MW34	12/07/10	3.49	26,200	10 U	335	0.43	22.0
12-MW34	12/13/11	2 U	23,600	17	295	5.45	1.65
12-MW34	12/12/12	1 U	15,200	38	249	0.50	0.141

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate as Nitrogen (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	300.0	353.3
Mariner Drive Petroleum Area							
12-MW15	12/09/08	--	--	--	--	--	--
12-MW15	12/01/09	--	--	--	--	--	--
12-MW15	12/06/10	--	--	--	--	--	--
12-MW15	12/14/11	--	--	--	--	--	--
12-MW15	12/12/12	--	--	--	--	--	--
12-MW16	12/09/08	--	--	--	--	--	--
12-MW16	12/01/09	--	--	--	--	--	--
12-MW16	12/06/10	--	--	--	--	--	--
12-MW16	12/14/11	--	--	--	--	--	--
12-MW16	12/12/12	--	--	--	--	--	--

Table 11. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 12, Naval Station Treasure Island

Well Identification	Date Sampled	Sulfide (mg/L)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)	Manganese (mg/L)
Analytical Method		376.1	160.1	160.2	Kit	Kit	Kit
Mariner Drive Petroleum Area							
12-MW15	12/09/08	--	555	17	--	--	--
12-MW15	12/01/09	--	665	10.0 U	--	--	--
12-MW15	12/06/10	--	678	10 U	--	--	--
12-MW15	12/14/11	--	615	10 U	--	--	--
12-MW15	12/12/12	--	725	10 U	--	--	--
12-MW16	12/09/08	--	535	11	--	--	--
12-MW16	12/01/09	--	498	10.0 U	--	--	--
12-MW16	12/06/10	--	445	10 U	--	--	--
12-MW16	12/14/11	--	464	10 U	--	--	--
12-MW16	12/12/12	--	530	10 U	--	--	--

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting
Kit - field test kit (Hach or similar)
mg/L - milligrams per liter
TDS - total dissolved solids
TSS - total suspended solids
U - validation flag signifying analyte not reported at or above the method detection limit

Table 12. Groundwater Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	1420	165
Risk-based concentration[2]		5	11.5	630	170	2
21-IP07	03/10/11	0.5 U	0.5 U	0.5 U	0.6	1.4
21-IP07	07/11/11	0.2 U	0.1 J	0.3 J	1.1	*13*
21-IP07	10/18/11	0.5 U	0.5 U	1.0	2.3	*24*
21-IP07	01/24/12	0.5 U	0.5 U	7.4	5.9	*100*
21-IP07	06/27/12	0.50 U	0.50 U	350	16	**660**
21-IP07	09/19/12	0.50 U	0.50 U	**830**	38	**1,300**
21-IP07	12/05/12	0.50 U	0.50 U	*630*	33	**1,100**
21-IP07	03/06/13	0.50 U	0.50 U	520	28	**810**
21-IP07	12/10/13	0.50 U	0.50 U	0.50 U	9.9	*14*
21-IP07 (dup)	12/10/13	0.50 U	0.50 U	0.50 U	10	*14*
21-MW02A	03/23/09	5 U	2.8 J	**2,000**	33	**430**
21-MW02A	06/25/09	1.7 U	1.3 J	0.8 J	1.7	1.7 U
21-MW02A	09/22/09	3.4	4.7	1.5 J	1.3 J	0.5 J
21-MW02A	01/21/10	0.5 U	0.2 J	0.3 J	0.6	0.2 J
21-MW02A	04/22/10	0.5 U	0.7	0.5 U	0.9	0.2 J
21-MW02A	03/15/11	0.5 U	1.2	0.5 U	0.5 U	1.2
21-MW02A	07/12/11	1.4	1.9	1.2	1.6	1.7
21-MW02A	10/18/11	1.0 U	1.3	1.0 U	1.6	0.8 J
21-MW02A	01/25/12	1.5	1.0 U	1.0 U	2.1	0.6 J
21-MW02A	06/27/12	2.9	2.5	1.9	2.1	*2.9*
21-MW02A	09/19/12	2.3	0.85	1.0	2.2	1.9
21-MW02A	12/03/12	2.6	2.1	6.8	3.2	*19*
21-MW02A	03/05/13	1.4	1.4	99	9.1	*130*
21-MW02A (dup)	03/05/13	1.5	1.4	100	9.3	*120*
21-MW02A	12/10/13	3.7	1.4	0.29 J	0.68	0.36 J

Table 12. Groundwater Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	1420	165
Risk-based concentration[2]		5	11.5	630	170	2
21-MW09A	03/23/09	0.3 J	0.6	21	0.8	*2.8*
21-MW09A	06/24/09	2.8	*19*	18	5.3	*3.7*
21-MW09A	09/22/09	3.1	*21*	53	7.8	*6.8*
21-MW09A	01/26/10	0.7	*14*	73	9.7	*18*
21-MW09A	04/22/10	0.7	*12*	30	3.6	*10*
21-MW09A	03/14/11	1.1	8.1	30	2.3	*4.1*
21-MW09A	07/07/11	0.7	5	29	1.8	*6.5*
21-MW09A	10/19/11	0.5 U	3.9	24	2	*8.5*
21-MW09A	01/25/12	0.6	5.4	26	2.5	*7.5*
21-MW09A	06/27/12	0.51	2.7	17	1.0	*5.3*
21-MW09A	09/18/12	0.34 J	1.7	19	1.4	*9.7*
21-MW09A	12/05/12	0.58	3.0	23	3.0	*8.8*
21-MW09A	03/06/13	0.50 U	3.0	20	1.7	*6.2*
21-MW09A	12/10/13	0.48 J	3.8	21	3.2	*4.5*

Notes:
[1]Project remedial goals based on future construction/commercial exposure presented in the *Final Record of Decision/Remedial Action Plan for IR Site 21, Naval Station Treasure Island, San Francisco, California* (DON 2013a)
[2]Risk-based concentrations based on future residential exposure presented in the *Final Record of Decision/Remedial Action Plan for IR Site 21, Naval Station Treasure Island, San Francisco, California* (DON 2013a)
bold font - value exceeds project remediation goal
italic font - value exceeds risk-based concentration

Abbreviations and Acronyms:
µg/L - micrograms per liter
DCE - dichloroethene
J - validation flag signifying analyte reported between the reporting limit and method detection limit
PCE - tetrachloroethene
TCE - trichloroethene
U - validation flag signifying analyte not reported at or above the method detection limit
VOCs - volatile organic compounds

Table 13. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)
Analytical Method		RSK-175	RSK-175	RSK-175
21-IP07	12/10/13	7,500	90	30
21-IP07 (dup)	12/10/13	6,600	87	29
21-MW02A	12/10/13	1,100	28	0.66 J
21-MW09A	12/10/13	150	26	0.44 J

Abbreviations and Acronyms:

µg/L - micrograms per liter

J - validation flag signifying analyte reported between the reporting limit and method detection limit

U - validation flag signifying analyte not reported at or above the method detection limit

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Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-BB38	01/27/05	*8.9*	**382**	**1,300**	37	*2 J*
24-BB38	09/19/12	0.50 U	1.3	10	0.49 J	*7.3*
24-BB38	03/12/13	0.50 U	1.3	26	0.55	*11*
24-BB38	12/12/13	0.50 U	1.7	30	0.57	*8.3*
24-BB38 (dup)	12/12/13	0.50 U	1.7	31	0.57	*9.3*
24-BB63	01/29/07	0.5 U	0.2	9.4	0.5 U	1.6
24-BB63	03/31/11	0.5 U	0.5 U	7.2	0.6	*11*
24-BB63	07/05/11	0.2 U	0.1 U	0.3 J	0.4 J	0.8
24-BB63	09/26/12	0.50 U	0.50 U	0.50 U	0.50 U	0.20 J
24-BB63	03/07/13	0.50 U	0.50 U	3.4	0.50 U	*5.5*
24-BB63	12/12/13	0.50 U	0.50 U	9.3	0.18 J	*10*
24-BB76	07/12/10	0.5 U	0.5 U	1.6	0.5 U	1.9
24-BB76	03/28/11	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J
24-BB76	10/12/11	0.5 U	0.5 U	1.3	0.5 U	*2.0*
24-BB76	01/23/12	0.5 U	0.5 U	1.4	0.5 U	1.4
24-BB76	06/26/12	0.50 U	0.50 U	1.8	0.50 U	1.4
24-BB76	09/19/12	0.50 U	0.50 U	0.68	0.50 U	1.2
24-BB76	12/10/12	0.50 U	0.50 U	3.5	0.50 U	*2.1*
24-BB76	03/06/13	0.50 U	0.50 U	2.4	0.50 U	1.6
24-BB76	12/11/13	0.50 U	0.50 U	0.72	0.50 U	0.50 U
24-BB80	01/30/07	0.5 U	0.09	0.4	0.2	*23*
24-BB80	02/01/10	1 U	0.4 J	110	0.6 J	*15*
24-BB80	04/21/10	0.5 U	0.5 U	10	0.5 U	*4.3*
24-BB80	03/22/11	0.5 U	0.5 U	4.2	0.5 U	1.9
24-BB80	07/05/11	0.2 U	0.1 U	2.5	0.2 U	1.8
24-BB80	10/06/11	0.5 U	0.5 U	4.1	0.5 U	*2.8*
24-BB80	01/23/12	0.5 U	0.5 U	17	0.5 U	*6.0*
24-BB80	06/27/12	0.50 U	0.50 U	0.26 J	0.50 U	0.68
24-BB80	12/06/12	0.50 U	0.50 U	6.0	0.50 U	*7.2*
24-BB80	12/12/13	0.50 U	0.50 U	2.8	0.50 U	*2.3*
24-BB89	03/24/11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
24-BB89	07/05/11	0.2 U	0.1 U	0.5 J	0.2 U	0.2 U
24-BB89	10/12/11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
24-BB89	12/12/13	0.50 U	0.50 U	0.12 J	0.11 J	0.50 U

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-EW11	05/10/05	1 J	3	**2,940**	12	*98.7*
24-EW11	01/29/07	0.5 U	0.2	0.7	0.9	0.3
24-EW11	02/02/10	2.9	0.9	1.5	0.3 J	0.4 J
24-EW11	10/13/10	0.5 U	0.5 U	0.8	0.5 U	0.6
24-EW11	06/25/12	0.50 U	1.2	**2,000**	8.2	**910**
24-EW11	09/26/12	0.50 U	4.8	**5,000**	27	**1,400**
24-EW11	12/04/12	0.50 U	1.7	**910**	17	**290**
24-EW11	03/12/13	0.50 U	1.7	**3,000**	10	**1,300**
24-EW11	12/12/13	0.50 U	0.10 J	160	8.4	*160*
24-EW11 (dup)	12/12/13	0.50 U	0.12 J	120	7.9	*162*
24-EW12	03/14/05	*9.1*	**118 J**	**7,660**	81	*16.5*
24-EW12	05/10/05	**645 J**	**2,560**	**7,980**	53	*39.4*
24-EW12	01/29/07	0.5 U	0.4	20	0.8	*9.5*
24-EW12	10/13/10	0.5 U	0.5 U	0.5 U	0.5 U	0.4 J
24-EW12	03/28/11	5 U	5 U	**1,600**	11	**320**
24-EW12	06/27/11	0.2 U	0.8	290	1.1	*80*
24-EW12	10/05/11	2.5 U	2.5 U	290	2.5 U	*140*
24-EW12	01/17/12	0.2 U	0.4 J	89	0.9	*60*
24-EW12	06/27/12	0.50 U	0.50 U	1.5	0.27 J	0.80
24-EW12	09/27/12	0.50 U	0.26 J	1.6	0.29 J	*2.1*
24-EW12	12/04/12	0.50 U	0.50 U	87	3.5	*98*
24-EW12	03/12/13	0.50 U	0.50 U	0.30 J	0.50 U	0.36 J
24-EW12	12/12/13	0.50 U	0.12 J	0.28 J	0.16 J	0.28 J
24-EW16	05/10/05	**5,770**	**3,500**	**1,830**	10	*27.6*
24-EW16	01/29/07	**180**	**1,800**	**7,200**	110	**510**
24-EW16	01/24/12	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J
24-EW16	12/06/12	0.50 U	0.65	0.89	0.50 U	0.23 J
24-EW16	12/11/13	0.50 U	0.83	1.2	0.17 J	0.39 J

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-EW28	09/23/09	0.3 JB	0.3 J	14	0.6	*12*
24-EW28	01/18/10	0.5 U	0.5 U	1	0.5 J	0.80
24-EW28	04/21/10	*6.3*	10	280	2.5 U	*89*
24-EW28	07/13/10	0.5 U	0.5 U	3.2	0.5 U	*5.7*
24-EW28	10/13/10	0.5 U	0.5 U	43	1	*66*
24-EW28	03/21/11	0.5 U	2	220	2.3	*78*
24-EW28	06/28/11	1.3 U	0.6 U	520	4.9	**180**
24-EW28	10/06/11	0.5 U	0.5 U	140	4.5	*160*
24-EW28	01/23/12	2.5 U	2.5 U	410	12	**310**
24-EW28	12/05/12	0.50 U	0.50 U	0.70	0.50 U	0.20
24-EW28	12/12/13	0.50 U	0.50 U	0.38 J	0.18 J	0.23 J
24-EW29	09/23/09	2.5 U	0.8 J	620	6.3	**430**
24-EW29	01/18/10	0.5 U	0.2 J	2	1.5	*4.5*
24-EW29	04/20/10	0.5 U	1.5	9.8	0.8	*17*
24-EW29	07/12/10	0.5 U	0.5 U	4	0.5 U	*6.9*
24-EW29	10/11/10	0.5 U	0.5 U	0.8	0.5 U	1.1
24-EW29	03/22/11	0.5 U	2	8.9	0.5 U	*6.2*
24-EW29	06/28/11	0.2 U	0.6	4.6	0.2	*4.8*
24-EW29	10/04/11	0.5 U	0.5 U	1.2	0.5 U	*2.8*
24-EW29	12/03/12	0.50 U	0.50 U	0.70	0.50 U	0.50 U
24-EW29	12/11/13	0.50 U	0.17 J	0.84	0.20 J	0.25 J
24-EW30	02/01/10	*11*	6.7	82	3.8	*23*
24-EW30	04/28/10	0.5 U	4.7	90	3.5	*31*
24-EW30	07/12/10	0.5 U	4.9	92	4	*37*
24-EW30	10/12/10	0.5 U	3.5	80	3.7	*37*
24-EW30	03/28/11	0.5 U	3	64	2.2	*20*
24-EW30	06/30/11	0.2 U	1.5	21	2.2	*19*
24-EW30	10/05/11	0.5 U	0.7	11	1.3	*11*
24-EW30	01/24/12	0.5 U	0.5 U	4.1	0.5 U	*6.1*
24-EW30	06/24/12	0.50 U	0.50 U	0.50 U	0.50 U	0.24 J
24-EW30	09/20/12	0.50 U	0.50 U	0.50 U	0.50 U	0.24 J
24-EW30	12/04/12	0.50 U	0.50 U	17	0.80	*23*
24-EW30	03/07/13	0.50 U	0.50 U	0.50 U	0.20 J	0.34 J
24-EW30	12/11/13	0.50 U	0.50 U	1.3	0.50 U	*2.4*

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-EW31	02/02/10	1.1 J	*48*	*680*	11	*75*
24-EW31	04/28/10	0.5 U	3.7	32	2.6	*29*
24-EW31	10/18/10	0.5 U	0.7	3.2	2.2	*7.9*
24-EW31	03/28/11	0.5 U	0.5 U	0.7	0.5 U	0.7
24-EW31	06/30/11	0.2 U	0.3 J	0.9	0.6	1.2
24-EW31	10/10/11	0.5 U	0.5 U	1.1	0.5 U	1.8
24-EW31	01/18/12	0.2 U	0.3 J	1.4	0.5	1.9
24-EW31	12/11/13	0.50 U	0.50 U	0.64	0.50 U	0.97
24-EW32	02/02/10	1.1	1.5	8.5	3.1	*6.5*
24-EW32	10/19/10	0.5 U	0.9	0.9	2.3	1.1
24-EW32	03/28/11	0.5 U	0.9	0.6	0.9	0.8
24-EW32	06/30/11	0.2 U	0.4 J	0.6	0.7	0.7
24-EW32	06/24/12	0.50 U	0.64	11	0.50 U	*80*
24-EW32	09/25/12	0.50 U	1.6	120	0.24 J	**270**
24-EW32	12/04/12	0.50 U	1.5	49	0.50 U	*62*
24-EW32	03/12/13	0.50 U	2.7	55	0.54	*75*
24-EW32 (dup)	03/12/13	0.50 U	2.7	57	0.53	*78*
24-EW32	12/12/13	0.50 U	0.17 J	0.31 J	0.50 U	0.69
24-EW33	10/21/10	0.5 U	0.5 U	3.8	0.5 U	*3.6*
24-EW33	03/29/11	0.5 U	0.5 U	9.1	0.5 U	*5.8*
24-EW33	07/05/11	0.2 U	0.1 U	11	0.2 U	*5.6*
24-EW33	10/11/11	0.5 U	0.5 U	13	0.5 U	*6*
24-EW33	01/19/12	0.5 U	0.5 U	34	0.5 U	*9.4*
24-EW33	06/26/12	0.50 U	0.50 U	3.0	0.50 U	*2.0*
24-EW33	09/25/12	0.50 U	0.50 U	1.6	0.50 U	1.6
24-EW33	12/07/12	0.50 U	0.50 U	2.5	0.50 U	0.77
24-EW33	03/11/13	0.50 U	0.50 U	0.87	0.50 U	0.63
24-EW33	12/12/13	0.50 U	0.50 U	1.4	0.50 U	0.98

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-EW34	10/21/10	0.7 U	0.7 U	93	2.3	*52*
24-EW34	03/29/11	0.5 U	0.5 U	16	1.1	*4.9*
24-EW34	07/05/11	0.2 U	0.1 U	4.8	1.8	*2.8*
24-EW34	10/11/11	0.5 U	0.5 U	3.2	1.6	*2.9*
24-EW34	01/19/12	0.5 U	0.5 U	2.4	2	1.3
24-EW34	06/25/12	0.50 U	0.50 U	1.1	1.2	0.68
24-EW34	09/24/12	0.50 U	0.50 U	0.76	1.2	0.71
24-EW34	12/07/12	0.50 U	0.50 U	0.66	0.43 J	0.50 U
24-EW34	03/11/13	0.50 U	0.50 U	0.41 J	0.39 J	0.35 J
24-EW34	12/12/13	0.50 U	0.50 U	0.60	0.53	1.1
24-EW4	05/10/05	**36,100**	**541 J**	108 J	0.9 J	0.057 U
24-EW4	01/29/07	**7,000**	**3,300**	**6,700**	58	**330**
24-EW4	09/23/09	0.5 U	0.5 U	3.4	0.5	*3.3*
24-EW4	01/18/10	0.5 U	0.1 J	3.3	0.3 J	1.7
24-EW4	04/20/10	0.5 U	0.5	7.0	0.9	*54*
24-EW4	07/13/10	0.5 U	0.5 U	3.3	0.5 U	*4.9*
24-EW4	10/11/10	0.5 U	0.5 U	4.2	0.5 U	*4.0*
24-EW4	03/22/11	0.5 U	0.9	60	3.6	*100 J*
24-EW4	06/28/11	0.2 U	0.8	1.4	1.9	0.4 J
24-EW4	10/04/11	0.5 U	0.5	1.1	2.1	0.7
24-EW4	06/26/12	0.50 U	0.50 U	38	5.6	*150*
24-EW4	09/26/12	0.50 U	0.74	6.4	0.3 J	*7.9*
24-EW4	12/03/12	0.50 U	0.80	7.0	0.50 U	*4.1*
24-EW4	03/12/13	0.50 U	0.36 J	3.1	0.50 U	0.52
24-EW4 (dup)	03/12/13	0.50 U	0.35 J	3.1	0.50 U	0.50 J
24-EW4	12/11/13	0.50 U	0.33 J	2.8	1.4	1.6

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-EW6	03/14/05	**213**	**87**	62	1 J	0.069 U
24-EW6	01/29/07	**160**	**86**	**1,900**	41	**440**
24-EW6	02/01/10	**590**	**290**	**4,000**	42	**510**
24-EW6	04/26/10	13 U	*50*	**1,600**	15	**600**
24-EW6	07/12/10	10 U	**76**	**1,600**	13	**530**
24-EW6	10/11/10	10 U	*35*	**1,100**	10 U	**260**
24-EW6	03/30/11	0.5 U	0.5 U	500	4.6	*160*
24-EW6	06/27/11	1.4 U	2.5	360	2.7	*93*
24-EW6	10/05/11	2.5 U	2.5 U	240	2.5 U	*83*
24-EW6	06/27/12	0.50 U	0.50 U	2.5	0.54	1.8
24-EW6	09/21/12	0.50 U	0.50 U	2.5	0.50 U	0.61
24-EW6	12/03/12	0.50 U	0.50 U	2.1	0.50 U	0.50 U
24-EW6	03/07/13	0.50 U	0.50 U	0.89	0.50 U	0.50 U
24-EW6	12/11/13	0.50 U	0.20 J	1.5	0.10 J	1.8
24-IW21	02/01/10	0.5 U	0.5 U	15	0.4 J	*2.8*
24-IW21	04/20/10	0.5 U	0.5	1	0.5 U	0.5 J
24-IW21	07/13/10	0.5 U	0.5 U	1.1	0.5 U	0.3 J
24-IW21	10/11/10	0.5 U	0.5 U	1	0.5 U	0.2 J
24-IW21	03/22/11	0.5 U	5.7	1	0.5 U	0.4 J
24-IW21	06/28/11	0.2 U	0.4 J	0.8	0.2 U	0.3 J
24-IW21	06/26/12	0.50 U	0.21 J	200	11	*130*
24-IW21	09/26/12	0.50 U	0.29 J	2.1	0.96	1.9
24-IW21	12/03/12	0.50 U	0.60	1.6	0.50 U	0.80
24-IW21	03/08/13	0.50 U	0.23 J	1.2	0.50 U	0.50 U
24-IW21 (dup)	03/08/13	0.50 U	0.23 J	1.2	0.50 U	0.50 U
24-IW21	12/11/13	0.17 J	0.17 J	0.78	0.37 J	0.20 J

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-IW5	01/20/05	**89**	**106**	114	17	*14*
24-IW5	05/01/07	*5.1*	*21*	24	1	*4.7*
24-IW5	09/23/09	0.5 U	0.5 U	0.3 J	0.5 U	0.5 U
24-IW5	02/01/10	2 U	1.5 J	240	6.9	*40*
24-IW5	04/20/10	2 U	3.5	150	3.9	*22*
24-IW5	07/12/10	0.5 U	0.5 U	1.4	0.5 U	1.8
24-IW5	10/11/10	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J
24-IW5	03/22/11	*15*	*17*	130	3.9	1
24-IW5	06/28/11	0.4 U	0.2 U	150	4	*13*
24-IW5	10/04/11	0.5 U	0.5 U	7.4	1	*9.5*
24-IW5	12/03/12	*16*	*24*	160	3.8	*8.1*
24-IW5	12/12/13	0.57	2.8	41	0.77	*15*
24-IW5 (dup)	12/12/13	0.60	2.9	43	0.77	*14*
24-IW8	01/20/05	**4,560**	**1,520**	**2270**	44	*140 J*
24-IW8	05/01/07	0.6	1.8	27	0.7	*62*
24-IW8	04/26/10	2.3	2.6	1.3	0.5 U	0.2 J
24-IW8	10/11/10	0.5 U	0.5 U	0.5	0.5 U	0.4 J
24-IW8	03/30/11	2.1	0.8	0.5 U	0.5 U	0.5 U
24-IW8	06/27/11	2.0 U	1.0 U	620	5	**180**
24-IW8	10/05/11	20 U	20 U	**2,700**	20 U	**630**
24-IW8	06/26/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
24-IW8	09/21/12	0.50 U	0.31 J	1.6	0.50 U	0.69
24-IW8	12/03/12	2.0	0.50 U	0.50 U	0.50 U	0.50 U
24-IW8	03/07/13	0.50 U	0.50 U	1.1	0.50 U	0.39 J
24-IW8	12/11/13	0.50 U	0.24 J	1.1	0.14 J	1.2
24-TW-04	12/06/04	*52*	**138**	139	1 J	*2 J*
24-TW-04	05/01/07	0.3 J	3.6	54	1.5	*9.7*
24-TW-04	10/11/11	0.5 U	0.5 U	0.5 U	0.5 U	0.4 J
24-TW-04	12/06/12	0.50 U	0.51	300	0.52	**180**
24-TW-04	12/12/13	0.50 U	0.23 J	67	0.18 J	*86*

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-TW-11	12/07/04	**552**	*20*	6.4	2 U	2 U
24-TW-11	01/29/07	**1,300**	**77**	22	6.3 U	6.3 U
24-TW-11	09/23/09	1.7 U	1.7 U	**960**	11	**1,300**
24-TW-11	02/01/10	50 U	63 U	**8,500**	43 J	**1,900**
24-TW-11	04/21/10	20 U	20 U	**3,300**	20 U	**2,000**
24-TW-11	07/13/10	*81 J*	*37 J*	580 J	3.6 U	**340 J**
24-TW-11	10/14/10	**130**	*49*	230	3.2	*80*
24-TW-11	03/28/11	**440**	**110**	**16,000**	110	**5,800**
24-TW-11	07/05/11	**170**	**68**	**1,100**	11	**390**
24-TW-11	10/06/11	*46*	*38*	600	8.5	**270**
24-TW-11	01/19/12	*47*	*43*	530	7	**200**
24-TW-11	06/27/12	0.50 U	0.50 U	2.1	0.34 J	*85*
24-TW-11	09/26/12	*5.8*	8.4	**720**	2.2	**250**
24-TW-11	11/29/12	**120**	**80**	590	3.9	**180**
24-TW-11	03/12/13	*47*	**59**	130	1.4	*52*
24-TW-11	12/12/13	*50*	**74**	69	1.5	*39*
24-TW-14	12/14/04	2 U	2 U	2 U	2 U	2 U
24-TW-14	04/26/10	0.5 U	0.5 U	94	0.5 U	*3*
24-TW-14	10/14/10	0.5 U	0.5 U	100	0.5 U	*6.9*
24-TW-14	07/05/11	0.2 U	0.5 J	150	0.7	*9.6*
24-TW-14	10/05/11	1.0 U	1.0 U	150	1	*9.3*
24-TW-14	01/18/12	1.3 U	1.3 U	150	1.4	*5.2*
24-TW-14	06/24/12	0.50 U	0.39 J	94	0.62	*19*
24-TW-14	09/19/12	0.50 U	0.36 J	110	0.65	*26*
24-TW-14	11/29/12	0.50 U	0.50 U	91	1.1	*23*
24-TW-14	03/06/13	0.50 U	0.29 J	63	0.41 J	*15*
24-TW-14	12/12/13	0.50 U	0.25 J	62	0.50 J	*29*
24-TW-14 (dup)	12/12/13	0.50 U	0.24 J	60	0.50	*29*
24-TW-16	12/14/04	2 U	2 U	2 U	2 U	2 U
24-TW-16	04/27/10	0.5 U	0.5 U	0.7	0.5 U	0.4 J
24-TW-16	09/21/12	0.50 U	0.50 U	12	0.50 U	*7.3*
24-TW-16	03/06/13	0.50 U	0.50 U	74	0.50 U	*8.8*
24-TW-16	12/12/13	0.50 U	0.50 U	71	0.16 J	*7.4*

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-TW-25	04/27/10	0.5 U	0.5 U	2.4	1.2	*3*
24-TW-25	03/28/11	0.5 U	0.5 U	2.5	0.6	*3.2*
24-TW-25	07/05/11	0.2 U	0.1 U	0.3 J	0.2 U	0.2 U
24-TW-25	10/05/11	0.5 U	0.5 U	1.5	0.5 U	1
24-TW-25	01/23/12	0.5 U	0.5 U	1.5	0.5 U	1.2
24-TW-25	06/24/12	0.50 U	0.50 U	1.6	0.30 J	1.0
24-TW-25	12/06/12	0.50 U	0.50 U	1.4	0.50 U	0.86
24-TW-25	12/11/13	0.50 U	0.50 U	1.8	0.34 J	0.72
24-TW-26	10/18/10	0.5 U	7.3	60	1.8	*53*
24-TW-26	10/11/11	0.5 U	0.5 U	2.9	0.5 U	*3.7*
24-TW-26	01/23/12	0.5 U	0.5 U	3	0.5 U	*3.4*
24-TW-26	06/24/12	0.50 U	0.37 J	4.3	0.50 U	*2.4*
24-TW-26	09/24/12	0.50 U	0.43 J	3.9	0.50 U	*2.6*
24-TW-26	12/06/12	0.50 U	0.40 J	1.4	0.50 U	1.4
24-TW-26	03/11/13	0.50 U	0.32 J	1.2	0.50 U	1.7
24-TW-26	12/11/13	0.50 U	0.50 U	0.67	0.50 U	0.86
24-TW-27	07/08/10	0.5 U	0.5 U	0.5 U	0.9	0.3 J
24-TW-27	10/11/11	0.5 U	0.5 U	0.5 U	0.8	*2.8*
24-TW-27	01/18/12	0.5 U	0.5 U	4.9	0.8	*25*
24-TW-27	12/12/13	0.21 J	0.16 J	0.26 J	0.17 J	0.48 J
24-TW-28	10/11/11	0.5 U	0.9	78	0.6	*5.5*
24-TW-28	01/17/12	0.2 U	2.2	90	1.2	*4.2*
24-TW-28	06/26/12	0.50 U	0.59	12	1.3	*15*
24-TW-28	09/25/12	0.50 U	1.3	14	1.7	*18*
24-TW-28	12/07/12	0.50 U	0.39 J	1.8	0.34 J	*2.7*
24-TW-28	03/12/13	0.50 U	0.50 U	0.80	0.74	0.45 J
24-TW-28 (dup)	03/12/13	0.50 U	0.50 U	0.85	0.72	0.45 J
24-TW-28	12/12/13	0.50 U	0.17 J	1.3	0.86	1.7

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-TW-36	07/08/10	1.3 U	5.6 J	170	9.8	*53*
24-TW-36	10/19/10	0.5 U	0.5	2.9	7	*2.3*
24-TW-36	10/11/11	0.5 U	0.5 U	0.5 U	3.4	0.2 J
24-TW-36	06/26/12	0.50 U	0.50 U	0.87	2.3	*2.3*
24-TW-36	09/21/12	0.50 U	0.50 U	0.37 J	2.1	0.78
24-TW-36	12/07/12	0.50 U	0.21 J	2.1	1.9	*7.4*
24-TW-36	03/11/13	0.50 U	0.50 U	0.30 J	1.5	0.66
24-TW-36	12/11/13	0.50 U	0.50 U	0.34 J	0.38 J	0.43 J
24-TW-37	07/07/10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
24-TW-37	03/28/11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
24-TW-37	10/05/11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
24-TW-37	01/18/12	0.5 U	0.5 U	0.5 U	0.5 U	0.1 U
24-TW-37	06/24/12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
24-TW-37	09/20/12	0.50 U	0.50 U	0.50 U	0.50 U	0.32 J
24-TW-37	12/05/12	0.50 U	0.50 U	0.99	0.50 U	0.50 U
24-TW-37	03/08/13	0.50 U	0.50 U	2.7	0.50 U	*3.3*
24-TW-37	12/11/13	0.50 U	0.50 U	2.0	0.50 U	0.91
24-TW-41	07/08/10	0.5 U	0.5 U	2.4	0.5 U	*5.5*
24-TW-41	10/18/10	0.5 U	0.5 U	4.6	0.5 U	*9.8*
24-TW-41	03/28/11	0.5 U	0.5 U	13	0.5 U	*9.3*
24-TW-41	07/05/11	0.2 U	0.1 U	9	0.2 U	*4.3*
24-TW-41	10/05/11	0.5 U	0.5 U	13	0.5 U	*7.5*
24-TW-41	01/18/12	0.5 U	0.5 U	23	0.5 U	*16*
24-TW-41	06/24/12	0.50 U	0.50 U	21	0.50 U	*14*
24-TW-41	09/25/12	0.50 U	0.50 U	36	0.50 U	*22*
24-TW-41	12/05/12	0.50 U	0.50 U	31	0.50 U	*17*
24-TW-41	03/12/13	0.50 U	0.50 U	23	0.23 J	*32*
24-TW-41	12/12/13	0.50 U	0.50 U	17	0.39 J	*33*
24-TW-42	10/19/10	0.5 U	0.5 U	1.7	1.1	0.4 J
24-TW-42	06/26/12	0.50 U	0.50 U	0.26 J	1.6	*2.2*
24-TW-42	12/07/12	0.50 U	0.50 U	0.71	1.4	1.9
24-TW-42	12/11/13	0.50 U	0.50 U	0.24 J	1.0	0.78

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2
24-TW-43	04/27/10	0.5 U	0.5 U	14	5.6	*16*
24-TW-43	07/08/10	0.5 U	0.5 U	5.5	4.3	*8.5*
24-TW-43	10/19/10	0.5 U	0.5 U	5.1	4	*2.2*
24-TW-43	06/30/11	0.2 U	0.1 U	0.6	4.4	1.3
24-TW-43	10/11/11	0.5 U	0.5 U	0.5 U	2.8	0.4 J
24-TW-43	01/18/12	0.2 U	0.1 U	0.4 J	3.5	0.6
24-TW-43	12/11/13	0.50 U	0.50 U	0.24 J	0.27 J	0.60
24-TW-47	06/26/12	0.50 U	0.50 U	0.64	0.50 U	0.50 U
24-TW-47	09/19/12	0.50 U	0.50 U	0.96	0.50 U	0.68
24-TW-47	11/29/12	0.50 U	0.50 U	170	2.9	*88*
24-TW-47	03/08/13	0.50 U	0.50 U	560	1.0	**460**
24-TW-47	12/12/13	0.50 U	0.20 J	24	0.33 J	*33*
24-TW-48	06/26/12	0.24 J	0.41 J	**4,500**	4.8	**500**
24-TW-48	09/26/12	0.50 U	0.26 J	0.97	0.44 J	*18*
24-TW-48	11/29/12	0.50 U	0.50 U	36	0.50 U	*66*
24-TW-48	03/12/13	0.58	0.22 J	31	0.88	*28*
24-TW-48	12/12/13	2.3	1.3	**1,100**	7.0	**500**
24-TW-49	06/25/12	0.50 U	0.50 U	11	0.50 U	1.5
24-TW-49	09/24/12	0.50 U	0.50 U	19	0.50 U	*2.4*
24-TW-49	12/07/12	0.50 U	0.50 U	4.9	0.50 U	0.91
24-TW-49	03/12/13	0.50 U	0.50 U	4.2	0.50 U	0.52
24-TW-49	12/12/13	0.50 U	0.50 U	2.8	0.50 U	0.22 J
24-TW-50	06/26/12	0.50 U	2.0	4.6	0.60	*3.2*
24-TW-50	09/26/12	0.50 U	0.42 J	0.54	0.34 J	0.35 J
24-TW-50	12/06/12	0.50 U	0.50 U	0.70	0.50 U	0.60
24-TW-50	03/08/13	0.50 U	0.50 U	0.41 J	0.50 U	0.50 U
24-TW-50	12/11/13	0.50 U	0.50 U	0.46 J	0.10 J	0.27 J
24-TW-53	06/26/12	3.0	12	*660*	3.4	*27*
24-TW-53	09/26/12	3.1	11	520	2.2	*41*
24-TW-53	12/06/12	0.50 U	1.8	46	3.5	*49*
24-TW-53	03/12/13	0.50 U	0.69	1.7	0.50 U	0.61
24-TW-53 (dup)	03/12/13	0.20 J	0.66	1.6	0.50 U	0.52
24-TW-53	12/12/13	0.50 U	0.45 J	1.2	0.27 J	*4.6*

Table 14. Groundwater Analytical Results - VOCs
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
Project remedial goal[1]		86	56	712	NA	165
Alt. project remedial goal[2]		5	16	630	NA	2

Notes:

[1]Project remedial goals based on future commercial exposure presented in the *Final Remedial Investigation and Focussed Feasibility Study Report for IR Site 24, Former Dry Cleaning Facility, Naval Station Treasure Island, San Francisco, California* (SulTech 2008)

[2]Alternate project remedial goals based on future residential exposure presented in the *Final Remedial Investigation and Focussed Feasibility Study Report for IR Site 24, Former Dry Cleaning Facility, Naval Station Treasure Island, San Francisco, California* (SulTech 2008)

bold font - value exceeds project remediation goal

italic font - value exceeds alternate project remediation goal

Abbreviations and Acronyms:

µg/L - micrograms per liter
DCE - dichloroethene
dup - field duplicate sample
J - validation flag signifying analyte reported between the reporting limit and method detection limit
NA - not applicable
PCE - tetrachloroethene
TCE - trichloroethene
U - validation flag signifying analyte not reported at or above the method detection limit
VOCs - volatile organic compounds

Table 15. Groundwater Analytical Results - Natural Attenuation and Geochemistry Parameters
IR Site 24, Naval Station Treasure Island

Well Identification	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Sulfate (mg/L)	Alkalinity (mg/L)	Ferrous Iron (mg/L)
Analytical Method		RSK-175	RSK-175	RSK-175	300.0	2320B	Kit
24-BB76	12/11/13	12,000	4.3 J	5.0 U	0.401 U	856	2.00
24-EW11	12/12/13	370	11	56	399	536	1.76
24-EW11 (dup)	12/12/13	280	10	50	437	508	--
24-EW12	12/12/13	13,000	77	5.0 U	43.0	915	2.28
24-EW29	12/11/13	14,000	55 J	5.0 UJ	2.76	1,290	12.8
24-EW32	12/12/13	4,800	110	5.0 U	4.78	964	10.6
24-EW6	12/11/13	18,000	93	5.0 U	5.43	1,250	22.0
24-IW21	12/11/13	11,000	120	5.0 U	3.15	1,190	0.80
24-IW8	12/11/13	15,000	47	5.0 U	6.82	1,110	19.2
24-TW-04	12/12/13	650	9.0	30	75.9	397	1.20
24-TW-11	12/12/13	15,000	230	150	0.389 U	1,290	40.8
24-TW-14	12/12/13	850	28	1.4 J	199	522	3.10
24-TW-14 (dup)	12/12/13	780	30	1.4 J	198	518	--
24-TW-28	12/12/13	3,100	6.1	1.0 J	39.5	966	5.90
24-TW-41	12/12/13	2,300	24	8.7	108	796	2.80
24-TW-47	12/12/13	9,100	38	12	251	716	19.2
24-TW-48	12/12/13	10,000	180	760	131	1,020	24.7

Abbreviations and Acronyms:

-- - not analyzed
µg/L - micrograms per liter
dup - field duplicate sample
Kit - field test kit (Hach or similar)
mg/L - milligrams per liter
J - validation flag signifying analyte reported between the reporting limit and method detection
U - validation flag signifying analyte not reported at or above the method detection limit

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Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	1,1,1,2-Tetrachloro ethane ($\mu g/m^3$)	1,1,1-Trichloro ethane ($\mu g/m^3$)	1,1,2,2-Tetrachloro ethane ($\mu g/m^3$)	1,1,2-Trichloro ethane ($\mu g/m^3$)	1,1-Dichloro ethane ($\mu g/m^3$)	1,1-Dichloro ethene ($\mu g/m^3$)
Soil gas SSSL[1]		13	208,571	1.7	6.1	61	2,920
21-SG-04	11/18/10	54 U	92	54 U	54 U	54 U	54 U
21-SG-04	01/17/11	47 U	85	47 U	47 U	47 U	47 U
21-SG-04	11/17/11	--	130	120 U	94 U	8.8 J	68 U
21-SG-04	12/19/13	31 U	75	24 U	26 U	26 U	26 U
21-SG-05	11/18/10	70 U	45 J	70 U	70 U	70 U	70 U
21-SG-05	01/17/11	47 U	45 J	47 U	47 U	47 U	47 U
21-SG-05	11/10/11	--	83 J	110 U	87 U	3.1 J	63 U
21-SG-05	12/19/13	48 U	46 J	38 U	40 U	40 U	40 U
21-SG-27	02/08/12	--	34 J	5.9 UJ	4.7 UJ	1.0 J	3.4 UJ
21-SG-27	12/19/13	11 U	34	8.5 U	8.9 U	8.9 U	8.9 U
21-SG-27 (dup)	12/19/13	10 U	35	8.3 U	8.7 U	8.7 U	8.7 U
21-SG-30	02/23/12	--	15	5.6 U	4.4 U	3.3 U	3.2 U
21-SG-30	12/19/13	7.3 U	19	5.8 U	6.1 U	6.1 U	6.1 U
21-SG-31	02/23/12	--	0.3 J	5.3 U	4.2 U	3.1 U	3.1 U
21-SG-31	12/19/13	0.75 U	0.34 J	0.60 U	0.63 U	0.63 U	0.63 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	1,2,4-Trichloro benzene (µg/m^3)	1,2,4-Trimethyl benzene (µg/m^3)	1,2-Dibromo ethane (µg/m^3)	1,2-Dichloro benzene (µg/m^3)	1,2-Dichloro ethane (µg/m^3)	1,2-Dichloro propane (µg/m^3)	1,3,5-Trimethyl benzene (µg/m^3)
Soil gas SSSL[1]		83	292	0.2	8,343	3.7	9.7	248
21-SG-04	11/18/10	54 U	54 U	--	54 U	54 U	54 U	54 U
21-SG-04	01/17/11	47 U	47 U	--	47 U	47 U	47 U	47 U
21-SG-04	11/17/11	130 U	85 U	130 U	100 U	70 U	79 U	85 U
21-SG-04	12/19/13	27 U	26 U	26 U	26 U	26 U	26 U	26 U
21-SG-05	11/18/10	70 U	70 U	--	70 U	70 U	70 U	70 U
21-SG-05	01/17/11	47 U	47 U	--	47 U	47 U	47 U	47 U
21-SG-05	11/10/11	120 U	78 U	120 U	96 U	64 U	73 U	78 U
21-SG-05	12/19/13	42 U	40 U	41 U	41 U	40 U	40 U	40 U
21-SG-27	02/08/12	6.4 UJ	1.5 J	6.6 UJ	5.2 UJ	3.5 UJ	4.0 UJ	0.4 J
21-SG-27	12/19/13	9.4 U	8.9 U	9.2 U	9.2 U	8.9 U	8.9 U	8.9 U
21-SG-27 (dup)	12/19/13	9.1 U	8.7 U	8.9 U	8.9 U	8.7 U	8.7 U	8.7 U
21-SG-30	02/23/12	6.0 U	1.2 J	6.2 U	4.9 U	3.3 U	3.7 U	0.3 J
21-SG-30	12/19/13	6.4 U	6.1 U	6.3 U	6.3 U	6.1 U	6.1 U	6.1 U
21-SG-31	02/23/12	5.7 U	1.2 J	5.9 U	4.6 U	3.1 U	3.6 U	0.3 J
21-SG-31	12/19/13	0.66 U	0.63 U	0.65 U	0.65 U	0.63 U	0.63 U	0.63 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	1,3-Dichloro benzene (µg/m^3)	1,4-Dichloro benzene (µg/m^3)	1,4-Dioxane (µg/m^3)	Benzene (µg/m^3)	Bromo dichloro methane (µg/m^3)	Bromoform (µg/m^3)	Bromo methane (µg/m^3)
Soil gas SSSL[1]		4,380	8.8	13	3.4	2.6	88	209
21-SG-04	11/18/10	54 U	54 U	54 U	54 U	54 U	54 U	54 U
21-SG-04	01/17/11	47 U	47 U	47 U	47 U	47 U	47 U	47 U
21-SG-04	11/17/11	100 U	100 U	62 U	3.2 J	120 U	180 U	67 U
21-SG-04	12/19/13	27 U	26 U	27 U	27 U	26 U	26 U	24 U
21-SG-05	11/18/10	70 U	70 U	70 U	70 U	70 U	70 U	70 U
21-SG-05	01/17/11	47 U	47 U	47 U	47 U	47 U	47 U	47 U
21-SG-05	11/10/11	96 U	96 U	57 U	51 U	110 U	160 U	62 U
21-SG-05	12/19/13	42 U	40 U	42 U	42 U	41 U	41 U	37 U
21-SG-27	02/08/12	0.5 J	5.2 UJ	3.1 UJ	1.7 J	5.8 UJ	8.9 UJ	3.4 UJ
21-SG-27	12/19/13	9.4 U	8.9 U	9.4 U	9.4 U	9.2 U	9.2 U	8.3 U
21-SG-27 (dup)	12/19/13	9.1 U	8.7 U	9.1 U	9.1 U	8.9 U	8.9 U	8.1 U
21-SG-30	02/23/12	4.9 U	4.9 U	2.9 U	2.6 U	5.4 U	8.4 U	3.1 U
21-SG-30	12/19/13	6.4 U	6.1 U	6.4 U	6.4 U	6.3 U	6.3 U	5.7 U
21-SG-31	02/23/12	0.6 J	4.6 U	2.8 U	2.5 U	5.2 U	8.0 U	3.0 U
21-SG-31	12/19/13	0.66 U	0.63 U	0.66 U	0.66 U	0.65 U	0.65 U	0.59 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	Carbon Disulfide (µg/m^3)	Carbon Tetra chloride (µg/m^3)	Chloro benzene (µg/m^3)	Chloro ethane (µg/m^3)	Chloroform (µg/m^3)	Chloro methane (µg/m^3)	cis-1,2-Dichloro ethene (µg/m^3)
Soil gas SSSL[1]		29,200	2.3	2,086	117	4.2	54	1,460
21-SG-04	11/18/10	540 U	54 U	54 U	54 U	54 U	54 U	29 J
21-SG-04	01/17/11	470 U	47 U	47 U	47 U	47 U	47 U	24 J
21-SG-04	11/17/11	54 U	110 U	79 U	45 U	**13 J**	36 U	25 J
21-SG-04	12/19/13	24 U	26 U	26 U	24 U	26 U	23 U	47
21-SG-05	11/18/10	700 U	70 U	70 U	70 U	70 U	70 U	70 U
21-SG-05	01/17/11	470 U	47 U	47 U	47 U	47 U	47 U	47 U
21-SG-05	11/10/11	50 U	100 U	73 U	42 U	**10 J**	33 U	11 J
21-SG-05	12/19/13	37 U	40 U	41 U	37 U	40 U	36 U	41 U
21-SG-27	02/08/12	4.7 J	1.4 J	4.0 UJ	2.3 UJ	**16 J**	1.8 UJ	7.6 J
21-SG-27	12/19/13	8.3 U	8.9 U	9.2 U	8.3 U	**240**	8.1 U	6.8 J
21-SG-27 (dup)	12/19/13	8.1 U	8.7 U	8.9 U	8.1 U	**240**	7.9 U	7.0 J
21-SG-30	02/23/12	1.7 J	1.0 J	3.7 U	2.1 U	3.1 J	1.7 U	3.2 U
21-SG-30	12/19/13	5.7 U	6.1 U	6.3 U	5.7 U	**16**	5.5 U	6.3 U
21-SG-31	02/23/12	0.5 J	0.4 J	3.5 U	2.0 U	3.8 U	1.6 U	3.1 U
21-SG-31	12/19/13	0.59 U	0.33 J	0.65 U	0.59 U	**6.9**	0.57 U	0.65 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	cis-1,3-Dichloro propene (µg/m^3)	Cumene (µg/m^3)	Dibromo chloro methane (µg/m^3)	Ethyl benzene (µg/m^3)	Hexachloro butadiene (µg/m^3)	m,p-Xylenes (µg/m^3)
Soil gas SSSL[1]		6.1	16,686	3.6	39	4.4	4,171
21-SG-04	11/18/10	54 U	54 U	54 U	54 U	--	--
21-SG-04	01/17/11	47 U	47 U	47 U	47 U	--	--
21-SG-04	11/17/11	78 U	--	150 U	75 U	180 U	75 U
21-SG-04	12/19/13	25 U	24 U	26 U	26 U	27 U	51 U
21-SG-05	11/18/10	70 U	70 U	70 U	70 U	--	--
21-SG-05	01/17/11	47 U	47 U	47 U	47 U	--	--
21-SG-05	11/10/11	72 U	--	140 U	69 U	170 U	69 U
21-SG-05	12/19/13	39 U	38 U	41 U	41 U	42 U	81 U
21-SG-27	02/08/12	3.9 UJ	--	7.4 UJ	1.3 J	9.2 UJ	5.5 J
21-SG-27	12/19/13	8.7 U	8.5 U	9.2 U	9.2 U	9.4 U	18 U
21-SG-27 (dup)	12/19/13	8.5 U	8.3 U	8.9 U	8.9 U	9.1 U	17 U
21-SG-30	02/23/12	3.7 U	--	6.9 U	3.5 U	8.6 U	3.5 U
21-SG-30	12/19/13	6.0 U	5.8 U	6.3 U	6.3 U	6.4 U	12 U
21-SG-31	02/23/12	3.5 U	--	6.6 U	3.3 U	8.2 U	3.3 U
21-SG-31	12/19/13	0.62 U	0.60 U	0.65 U	0.65 U	0.66 U	1.3 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	Methyl tert-Butyl Ether (µg/m^3)	Methylene Chloride (µg/m^3)	Naphthalene (µg/m3)	o-Xylene (µg/m^3)	Tetrachloro ethene (µg/m^3)	Toluene (µg/m^3)
Soil gas SSSL[1]		374	97	2.9	4,171	16	12,514
21-SG-04	11/18/10	54 U	54 U	54 U	--	**13,000**	54 U
21-SG-04	01/17/11	47 U	47 U	47 U	--	**7,400**	47 U
21-SG-04	11/17/11	62 U	60 U	360 U	75 U	**12,000**	65 U
21-SG-04	12/19/13	26 U	24 U	25 U	25 U	**8,200**	26 U
21-SG-05	11/18/10	70 U	70 U	70 U	--	**13,000**	57 J
21-SG-05	01/17/11	47 U	47 U	47 U	--	**7,800**	47 U
21-SG-05	11/10/11	57 U	55 U	**8.3 J**	69 U	**18,000**	60 U
21-SG-05	12/19/13	40 U	38 U	39 U	39 U	**8,900**	40 U
21-SG-27	02/08/12	3.1 UJ	3.0 UJ	**2.9 J**	1.7 J	**2,100 J**	9.2 J
21-SG-27	12/19/13	8.9 U	8.5 U	8.7 U	8.7 U	**1,800**	8.9 U
21-SG-27 (dup)	12/19/13	8.7 U	8.3 U	8.5 U	8.5 U	**1,800**	8.7 U
21-SG-30	02/23/12	2.9 U	2.8 U	0.6 J	3.5 U	**570**	3.1 U
21-SG-30	12/19/13	6.1 U	5.8 U	6.0 U	6.0 U	**1,200**	6.1 U
21-SG-31	02/23/12	2.8 U	2.7 U	1.0 J	3.3 U	6.5	2.9 U
21-SG-31	12/19/13	0.63 U	0.60 U	0.62 U	0.62 U	13	0.70 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	trans-1,2-Dichloro ethene (µg/m^3)	trans-1,3-Dichloro propene (µg/m^3)	Trichloro ethene (µg/m^3)	Trichloro trifluoro ethane (µg/m^3)	Vinyl Chloride (µg/m^3)
Soil gas SSSL[1]		2,503	NE	20	1,255,600	1.2
21-SG-04	11/18/10	54 U	--	**2,300**	54 U	54 U
21-SG-04	01/17/11	47 U	--	**1,400**	47 U	47 U
21-SG-04	11/17/11	68 U	--	**2,600**	--	44 U
21-SG-04	12/19/13	26 U	25 U	**1,700**	26 U	24 U
21-SG-05	11/18/10	70 U	--	**1,800**	70 U	70 U
21-SG-05	01/17/11	47 U	--	**1,200**	47 U	47 U
21-SG-05	11/10/11	63 U	--	**2,700**	--	41 U
21-SG-05	12/19/13	40 U	39 U	**1,500**	41 U	37 U
21-SG-27	02/08/12	0.5 J	--	**810 J**	--	2.2 UJ
21-SG-27	12/19/13	8.9 U	8.7 U	**690**	9.2 U	8.3 U
21-SG-27 (dup)	12/19/13	8.7 U	8.5 U	**690**	8.9 U	8.1 U
21-SG-30	02/23/12	3.2 U	--	**220**	--	2.1 U
21-SG-30	12/19/13	6.1 U	6.0 U	**180**	6.3 U	5.7 U
21-SG-31	02/23/12	3.1 U	--	4.6	--	2.0 U
21-SG-31	12/19/13	0.63 U	0.62 U	4.4	0.43 J	0.59 U

Table 16. Soil Gas Analytical Results - VOCs
IR Site 21, Naval Station Treasure Island

Notes:

[1]SSSLs are based on site-specific risk-based screening levels presented in the *Final HHRA Addendum, IR Site 21, Naval Station Treasure Island, San Francisco, California* (Shaw 2012b) for sub-slab soil gas samples, resident (child/adult 30-year) scenario for future building slab on grade without engineered fill.

bold - value exceeds SSSL

Abbreviations and Acronyms:

µg/m^3 - micrograms per cubic meter
J - validation flag signifying analyte reported between the reporting limit and method detection limit
NE - not established
SSSL - site-specific screening level
U - validation flag signifying analyte not reported at or above the method detection limit

Table 17. Soil Gas Analytical Results - Natural Attenuation Parameters and Helium
IR Site 21, Naval Station Treasure Island

Well Identification	Date Sampled	Oxygen (% v/v)	Methane (% v/v)	Carbon Dioxide (% v/v)	Hydrogen Sulfide ($\mu g/m^3$)	Helium (% v/v)
Analytical Method		3C Mod.	3C Mod.	3C Mod.	D5504-08	3C Mod.
21-SG-04	12/15/10	16.7	0.16 U	5.2	--	--
21-SG-04	01/17/11	--	--	--	7.0 U	--
21-SG-04	11/17/11	16.8	0.17 U	3.0	7.0 U	0.17 U
21-SG-04	12/19/13	20.0	0.15 U	1.20	11 U	0.27
21-SG-05	12/15/10	18.2	0.16 U	3.8	--	--
21-SG-05	01/17/11	--	--	--	7.0 U	--
21-SG-05	11/10/11	16.8	0.24 U	2.2	--	0.16 U
21-SG-05	12/12/11	--	--	--	7.0 U	--
21-SG-05	12/19/13	--	--	--	--	0.0036 U
21-SG-27	02/08/12	19.1	0.17 U	0.2	7.0 U	1.3
21-SG-27	12/19/13	21.1	0.15 U	0.195	10 U	0.0037 U
21-SG-27 (dup)	12/19/13	21.1	0.15 U	0.205	10 U	0.0036 U
21-SG-30	02/09/12	--	--	--	7.0 U	--
21-SG-30	02/23/12	19.1	0.17 U	0.4	--	0.17 U
21-SG-30	12/19/13	21.0	0.15 U	0.543	10 U	0.0037 U
21-SG-31	02/09/12	--	--	--	7.0 U	--
21-SG-31	02/23/12	19.1	0.15 U	0.05	--	0.32
21-SG-31	12/19/13	--	--	--	--	0.0074

Abbreviations and Acronyms:

-- - not analyzed
% v/v - volumetric percent
dup - field duplicate sample
$\mu g/m^3$ - micrograms per cubic meter
U - validation flag signifying analyte not reported at or above the method detection limit

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Table 18. Groundwater Quality Control Analytical Results
March 2013 through December 2013
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
SOURCE BLANK	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/04/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/05/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/06/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/06/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/06/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/06/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/06/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/07/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/08/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/08/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	03/12/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	03/13/13	--	--	--	--	--
SOURCE BLANK	03/13/13	--	--	--	--	--
EQUIPMENT RINSATE	03/13/13	--	--	--	--	--
TRIP BLANK	04/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SOURCE BLANK	04/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	04/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	06/24/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	06/25/13	--	--	--	--	--
TRIP BLANK	06/26/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SOURCE BLANK	06/26/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	06/26/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	09/16/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	12/10/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	12/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SOURCE BLANK	12/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	12/11/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
EQUIPMENT RINSATE	12/12/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TRIP BLANK	12/13/13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 18. Groundwater Quality Control Analytical Results
March 2013 through December 2013
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	Benzene (µg/L)	Ethyl Benzene (µg/L)	TPHp (µg/L)	TPHd (µg/L)	TPHmo (µg/L)
SOURCE BLANK	03/04/13	--	--	--	--	--
TRIP BLANK	03/04/13	--	--	--	--	--
TRIP BLANK	03/04/13	--	--	--	--	--
TRIP BLANK	03/04/13	--	--	--	--	--
TRIP BLANK	03/04/13	--	--	--	--	--
EQUIPMENT RINSATE	03/04/13	--	--	--	--	--
EQUIPMENT RINSATE	03/05/13	--	--	--	--	--
TRIP BLANK	03/06/13	--	--	--	--	--
TRIP BLANK	03/06/13	--	--	--	--	--
TRIP BLANK	03/06/13	--	--	--	--	--
TRIP BLANK	03/06/13	--	--	--	--	--
EQUIPMENT RINSATE	03/06/13	--	--	--	--	--
EQUIPMENT RINSATE	03/07/13	--	--	--	--	--
TRIP BLANK	03/08/13	--	--	--	--	--
EQUIPMENT RINSATE	03/08/13	--	--	--	--	--
TRIP BLANK	03/11/13	--	--	--	--	--
TRIP BLANK	03/11/13	--	--	--	--	--
EQUIPMENT RINSATE	03/11/13	--	--	--	--	--
EQUIPMENT RINSATE	03/12/13	--	--	--	--	--
TRIP BLANK	03/13/13	--	--	100 U	--	--
SOURCE BLANK	03/13/13	--	--	100 U	98 U	490 U
EQUIPMENT RINSATE	03/13/13	--	--	100 U	100 U	510 U
TRIP BLANK	04/16/13	0.50 U	2.0U	--	--	--
SOURCE BLANK	04/16/13	0.50 U	2.0U	--	--	--
EQUIPMENT RINSATE	04/16/13	0.50 U	2.0U	--	--	--
TRIP BLANK	06/24/13	0.50 U	2.0U	100 U	--	--
TRIP BLANK	06/25/13	--	--	100 U	--	--
TRIP BLANK	06/26/13	0.50 U	2.0U	100 U	--	--
SOURCE BLANK	06/26/13	0.50 U	2.0U	100 U	100 U	510 U
EQUIPMENT RINSATE	06/26/13	0.50 U	2.0U	100 U	97 U	480 U
TRIP BLANK	09/16/13	0.50 U	2.0 U	100 U	--	--
TRIP BLANK	12/10/13	0.50 U	1.0 U	--	--	--
TRIP BLANK	12/10/13	--	--	--	--	--
EQUIPMENT RINSATE	12/10/13	--	--	--	--	--
TRIP BLANK	12/11/13	--	--	--	--	--
SOURCE BLANK	12/11/13	--	--	--	--	--
EQUIPMENT RINSATE	12/11/13	--	--	--	--	--
EQUIPMENT RINSATE	12/12/13	--	--	--	--	--
TRIP BLANK	12/13/13	--	--	--	--	--

Table 18. Groundwater Quality Control Analytical Results
March 2013 through December 2013
IR Sites 6, 12, 21, and 24, Naval Station Treasure Island

Abbreviations and Acronyms:

µg/L - micrograms per liter
DCE - dichloroethene
PCE - tetrachloroethene
TCE - trichloroethene
TPHd - total petroleum hydrocarbons in the diesel
TPHmo - total petroleum hydrocarbons in the motor
TPHp - total petroleum hydrocarbons in the purgeable
U - validation flag signifying analyte not reported at or
VOCs - volatile organic compounds

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Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	1,1,1,2-Tetrachloro ethane (µg/m^3)	1,1,1-Trichloro ethane (µg/m^3)	1,1,2,2-Tetrachloro ethane (µg/m^3)	1,1,2-Trichloro ethane (µg/m^3)	1,1-Dichloro ethane (µg/m^3)	1,1-Dichloro ethene (µg/m^3)
IR21-TB-121913	12/19/13	0.50 U	0.41 U	0.40 U	0.42 U	0.42 U	0.42 U

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	1,2,4-Trichloro benzene (µg/m^3)	1,2,4-Trimethyl benzene (µg/m^3)	1,2-Dibromo ethane (µg/m^3)	1,2-Dichloro benzene (µg/m^3)	1,2-Dichloro ethane (µg/m^3)	1,2-Dichloro propane (µg/m^3)	1,3,5-Trimethyl benzene (µg/m^3)
IR21-TB-121913	12/19/13	0.44 U	0.42 U	0.43 U	0.43 U	0.42 U	0.42 U	0.42 U

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	1,3-Dichloro benzene (µg/m^3)	1,4-Dichloro benzene (µg/m^3)	1,4-Dioxane (µg/m^3)	Benzene (µg/m^3)	Bromo dichloro methane (µg/m^3)	Bromoform (µg/m^3)	Bromo methane (µg/m^3)
IR21-TB-121913	12/19/13	0.44 U	0.42 U	0.44 U	0.44 U	0.43 U	0.43 U	0.39 U

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	Carbon Disulfide (µg/m^3)	Carbon Tetra chloride (µg/m^3)	Chloro benzene (µg/m^3)	Chloro ethane (µg/m^3)	Chloroform (µg/m^3)	Chloro methane (µg/m^3)	cis-1,2-Dichloro ethene (µg/m^3)
IR21-TB-121913	12/19/13	0.39 U	0.42 U	0.43 U	0.39 U	0.42 U	0.38 U	0.43 U

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	cis-1,3-Dichloro propene (µg/m^3)	Cumene (µg/m^3)	Dibromo chloro methane (µg/m^3)	Ethyl benzene (µg/m^3)	Hexachloro butadiene (µg/m^3)	m,p-Xylenes (µg/m^3)
IR21-TB-121913	12/19/13	0.41 U	0.40 U	0.43 U	0.43 U	0.44 U	0.84 U

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	Methyl tert-Butyl Ether (µg/m^3)	Methylene Chloride (µg/m^3)	Naphthalene (µg/m^3)	o-Xylene (µg/m^3)	Tetrachloro ethene (µg/m^3)	Toluene (µg/m^3)
IR21-TB-121913	12/19/13	0.42 U	0.40 U	0.41 U	0.41 U	0.39 U	0.31 J

Table 19. Soil Gas Quality Control Analytical Results
December 2013
IR Site 21, Naval Station Treasure Island

Quality Control Sample Identification	Date Sampled	trans-1,2-Dichloro ethene (µg/m^3)	trans-1,3-Dichloro propene (µg/m^3)	Trichloro ethene (µg/m^3)	Trichloro trifluoro ethane (µg/m^3)	Vinyl Chloride (µg/m^3)
IR21-TB-121913	12/19/13	0.42 U	0.41 U	0.42 U	0.43 U	0.39 U

Abbreviations and Acronyms:

µg/m^3 - micrograms per cubic meter

J - validation flag signifying analyte reported between the reporting limit and method detection limit

U - validation flag signifying analyte not reported at or above the method detection limit

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Appendix A: Gauging and Sampling Logs

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Date: 3/4/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: P. Hamner **Time of Low Tide:** 11:22 **Tide Height (Ft):** 0.3

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
21-MW01	6.59		mark	1155	
21-MW01B	6.95		mark	1158	
21-MW12	6.41		mark	1207	
21-IP04	7.21		mark	1223	
21-IP03	6.80		toc	1226	
21-MW08B	6.36		mark	1229	
21-MW08A	6.21		mark	1232	
21-MW02B	7.13		mark	1254	
21-MW02A	6.78	12.1	mark	1309	Pulled pump 1256
21-IP07	7.23		mark	1300	

Note: Y = Yes; N = No

Date: 3/4/13

Project Location: NAVSTA TI Site Num 21 & 24

Field Personnel: Brad Sperry Time of Low Tide: 1122 Tide Height (Ft): 0.3

Site 21

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
MW09B	07.48	-	Mark	1153	
IP19	07.38	-	Mark	1158	
MW14	06.99	-	Mark	1205	
IP17	06.95	-	Mark	1213	
IP10	06.93	-	Mark	1221	
IP05	07.30	-	- NA	1224	
IP12	07.27	-	No Mark	1230	
IP18	07.35	-	Mark	1234	
MW09A	07.18	-	Mark	1235	
~~MW07A~~ A3	~~08.02~~	~~20.05~~	~~Mark~~	~~1252~~	
MW07A3	0802	20.05	Mark	1252	
MW04A	06.61	12.10	Mark	1304	

JBS 3/4/13

Date: 3/4/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: NN **Time of Low Tide:** 1122 **Tide Height (Ft):** 0.3

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
21-MW13	6.89	10.28	Sharpie	1240	Water in vault; no bolts
21-IP36	7.72	10.47	TOC	1244	
21-MW07B	7.92	23.64	TOC	1257	Water in vault
21-MW04B	7.80	26.51	Sharpie	1303	
21-MW07A2	7.83	15.60	TOC	1310	
21-MW07A1	6.80	10.72	Sharpie	1314	Water in vault

Note: Y = Yes; N = No

Date: 3/4/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: Justin Mercer, Gerald **Time of Low Tide:** 11:30 **Tide Height (Ft):**

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
21-MW03A	~~7.11~~ 7.59	13.30	Sharpie mark/Top of	~~12:20~~ 12:38	~~standing water in well~~
21-MW03B	~~7.52~~ 7.82	26.14	Sharpie/Top of PVC	~~12:22~~ 12:39	~~standing water in well~~
21-MW11A	7.11		Sharpie/Top of PVC	12:20	
21-MW11B	7.52		Sharpie/Top of PVC	12:22	
21-MW10B	7.75		Sharpie/Top of PVC	12:28	
21-MW10A	7.42		Sharpie/Top of PVC	12:32	
21-IP20	~~7.46~~ 7.70		Top of PVC casing	12:35	
21-IP30	7.58		Top of Casing	12:53	
21-IP37	8.09		Top of Casing	12:56	
21-MW05	7.26	11.61	TOC (PVC)	12:59	RP=SHARPIE MARK

Note: Y = Yes; N = No

Date: 3/5/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: P. Hamner, BTOM **Time of Low Tide:** 1235 **Tide Height (Ft):** 0.1

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
24-BB37	8.54	~~[illegible]~~	mark	1237	
24-BB38	8.69		mark	1245	
24-BB108	8.72		TOC	1248	
24-BB40	8.72		TOC	1252	
24-BB42	9.31		TOC	1259	
24-TW-46	9.20		TOC	1301	
24-TW-30	7.52		notch	1305	
24-TW-32	9.15		TOC	1307	
24-EW34					Couldn't access
24-TW-49	8.93		notch	1312	
24-EW-33	7.55		mark	1319	
24-TW-28	7.69		TOC	1320	
24-TW-16	7.74		TOC	1324	
24-TW-36	7.93		TOC	1326	
24-MW10C	6.42		TOC	1328	
24-EW32	7.24		notch	1339	
24-EW16	6.93		mark	1340	
24-EW18	8.00		TOC	1345	casing recently cut
24-MW06A	6.68		mark	1347	
24-EW11	6.47		mark	1350	
24-MW06B	6.19		mark	1351	
24-BB63	7.11		TOC	1358	
24-TW-38	7.36		TOC	1359	
24-TW-26	6.90		~~TOC~~ notch	1400	
24-TW-44	6.62		TOC	1402	
24-TW-34	6.72		TOC	1406	
24-TW-37	6.55		TOC	1407	
24-TW-41	6.91		TOC	1408	
24-TW-14	6.21		TOC	1409	
24-TW-40	6.74		grade	1411	well broken

Note: Y = Yes; N = No

Date: 3/5/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: PH, GT, JM **Time of Low Tide:** 1235 **Tide Height (Ft):** 0.1

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
24-EW30	5.71		TOC	1412	
24-MW07C	6.19		mark	1416	
24-IW11	6.90		TOC	1418	
24-MW07A	5.62		TOC	1420	
24-MW07B	5.90		TOC	1422	
24-EW8	5.71		mark	1426	
24-TW-50	6.21		notch	1432	
24-EW12	6.42		notch	1430	
24-TW-51	6.39		notch	1434	
24-TW-52	6.60		TOC	1440	
24-TW-53	6.46		notch	1438	
24-EW5	7.92		TOC	1456	
24-MW04	5.81		TOC	1501	
24-IW6	6.19		TOC	1509	TetraTech lock 4721
24-MW2B-1	5.84		mark	1517	
24-MW2A-1	5.62		mark	1516	
24-MW3A2	5.70		mark	1520	
24-MW5	6.16		mark	1523	
24-BB7b	6.36		TOC	1533	
24-BB7B	5.80		TOC	1536	bioslime
24-TW-11	5.25		TOC	1546	

Note: Y = Yes; N = No

Date: 3/5/13

Project Location: NAVSTA TI **Site Num** 21 & 24

Field Personnel: NN **Time of Low Tide:** 1235 **Tide Height (Ft):** 0.1

Well Number	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point (i.e., Sharpie Mark, Brass Screw)	Time	Observations
24-BB96	6.92	20.17	TOC	1250	
24-EW36	5.41		Sharpie	1503	
24-TW23	6.08		TOC	1508	
24-TW48	5.60		Sharpie	1515	
24-EW6	5.74		TOC	1517	
24-IW8	6.25		Sharpie	1525	
24-TW-03	5.32		TOC	1540	
24-TW47	5.30		TOC	1543	
24-IW21	5.69		TOC	1545	
24-EW4	5.71		TOC	1548	

Note: Y = Yes; N = No

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-IP03 Date: 3/4/13

Sampling Personnel: P. Hammer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: bladder 3/4

Cycles per min: MN Pressure: 25 PSI Recharge: 2.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.62 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 17.6 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 16:46

Sample Time: 1712 Sample ID: 21-IP03-030413

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS: well too small to gauge while purging

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1650	250	–	16.09	0.733	0.09	7.20	-132.3	36	
1653	250	–	16.26	0.711	0.04	7.23	-134.4	29	
1656	250	–	16.29	0.716	0.02	7.24	-138.1	21	
1659	250	–	16.34	0.725	0.01	7.26	-139.4	15	
1702	250	–	16.37	0.733	0.01	7.27	-142.3	11	
1705	250	–	16.38	0.740	0.01	7.29	-143.1	11	
1708	250	–	16.36	0.750	0.01	7.30	-144.6	10	ok to sample PP

3/4/13 [illegible]

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-IP04 Date: 3/4/13

Sampling Personnel: P. Hamper

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: bladder 3/4"

Cycles per min: MN Pressure: 25 PSI Recharge: 1.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.12 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 13.5 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1534

Sample Time: 1615 Sample ID: 21-IP04-030413

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS: well too small to gauge while purging

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1542	100	–	16.24	1.044	0.23	6.80	-80.8	85	
1545	100	–	16.19	0.943	0.13	6.82	-100.4	65	
1548	100	–	16.14	0.905	0.08	6.87	-114.5	45	
1551	100	–	16.08	0.907	0.05	6.88	-123.2	33	
1554	100	–	16.06	0.941	0.04	6.90	-131.7	24	
1557	100	–	16.03	0.986	0.04	6.91	-138.0	19	
1600	100	–	15.98	1.020	0.03	6.92	-139.9	14	
1603	100	–	15.96	1.042	0.02	6.93	-140.6	13	
1606	100	–	15.90	1.061	0.02	6.93	-143.7	11	
1609	100	–	15.92	1.071	0.02	6.94	-143.7	10	
1612	100	–	15.92	1.081	0.02	6.94	-145.0	9	ok to sample

3/4/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: IP05
Date: 3/6/13

Sampling Personnel: J. Spenny

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 0.75 QED

Cycles per min: Manual Pressure: 19 PSI Recharge: 5 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.6 ppm
Static Depth to Water: 6.92 ft
Reference Point: none
Casing Diameter: 1 in
Total Depth: 14.36 ft

SAMPLE INFORMATION

Sample Depth: 10 ft
Purge Start Time: 1040
Sample Time: 1130 Sample ID: 21-IP05-030613
QC Sample Type: — QC Sample Time: —
QC Sample ID: —

COMMENTS: * → Probe too large for casing, no readings collected

7.00 final WL

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1050	100	*	15.70	15.81	0.08	7.44	-135.4	38.3	
1055	100	*	15.68	16.18	0.03	7.44	-139.3	17.5	
1100	100	*	15.52	16.65	0.02	7.44	-141.8	9.90	
1105	100	*	15.52	16.86	0.01	7.43	-142.1	7.24	
1110	100	*	15.58	16.98	0.01	7.43	-128.3	4.50	
1115	100	*	15.59	17.03	0.01	7.43	-122.4	4.48	
1120	100	*	15.54	17.08	0.01	7.42	-120.7	2.99	Sample

TMS 3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-IP07 Date: 3/6/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.13 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 18.3 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1538

Sample Time: 1600 Sample ID: 21-IP07-030613

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1544	145	7.20	16.91	1.219	0.10	7.04	-75.6	6.5	
1547	145	7.21	17.00	1.295	0.03	7.07	-92.8	5.1	
1550	145	7.21	17.05	1.325	0.02	7.08	-99.1	2.9	
1553	145	7.22	17.06	1.353	0.01	7.09	-104.4	2.2	
1556	145	7.21	17.08	1.372	0.01	7.10	-106.7	1.9	ok to sample pll

3/6/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21-IP10
Date: 3/6/13

Sampling Personnel: J. Spencer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: manual Pressure: 19 PSI Recharge: 5 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 6.33 ft
Reference Point: mark
Casing Diameter: 1 in
Total Depth: 12.43 ft

SAMPLE INFORMATION

Sample Depth: 10 ft
Purge Start Time: 800
Sample Time: 910 Sample ID: 21-IP10-030613
QC Sample Type: — QC Sample Time: —
QC Sample ID: —

COMMENTS: * Well too small to fit probe

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
810	115	*	14.90	0.742	1.24	8.36	-71.7	87.2	
815	115	*	15.11	0.709	0.06	8.24	-113.0	49.8	
820	115	*	15.26	0.687	0.04	8.24	-125.0	33.0	
825	115	*	15.47	0.670	0.03	8.24	-127.3	24.8	
830	115	*	15.60	0.660	0.02	8.25	-132.7	17.8	
835	115	*	15.54	0.665	0.02	8.24	-130.6	14.3	
840	115	*	15.42	0.651	0.02	8.22	-133.8	11.5	
845	115	*	15.65	0.647	0.02	8.22	-136.7	10.6	
850	115	*	15.72	0.645	0.02	8.25	-137.4	8.78	
855	115	*	15.83	0.642	0.02	8.23	-138.6	9.64	
900	115	*	16.14	0.640	0.02	8.28	-140.7	7.85	Sample

JS 3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: IP12 Date: 3/6/13

Sampling Personnel: J. Sgrey

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: manual Pressure: 19 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 10 ft
Static Depth to Water: 6.97 ft	Purge Start Time: 1150
Reference Point: none	Sample Time: 1223 Sample ID: 21-IP12-030613
Casing Diameter: 1 in	QC Sample Type: — QC Sample Time: —
Total Depth: 14.74 ft	QC Sample ID: —

COMMENTS: * -> water level meter probe does not fit in borehole

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1200	* 115	*	16.13	1.797	0.08	7.29	-108.7	14.9	
1205	115	*	16.20	1.735	0.04	7.28	-118.6	10.2	
1210	115	*	16.26	1.728	0.03	7.29	-125.4	8.12	
1213	115	*	16.29	1.725	0.02	7.30	-128.8	6.22	
1218	115	*	16.36	1.723	0.02	7.29	-132.9	5.31	Sample

JBS 3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-IP17 Date: 3/5/13

Sampling Personnel: J. Sperry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: 6 Pressure: 20 PSI Recharge: 7.6 sec Discharge: 2.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.55 ft

Reference Point: mark

Casing Diameter: 1 in

Total Depth: 13.36 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 953

Sample Time: 1050 Sample ID: 21-IP17-030513

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1000	85	*	15.26	0.871	0.69	7.95	75.7	20.9	
1005	100	*	15.58	0.872	0.16	7.93	66.5	13.6	
1010	100	*	15.80	0.875	0.15	7.93	48.0	11.7	
1015	100	*	15.97	0.878	0.08	7.93	15.4	10.1	
1020	100	*	16.17	0.882	0.06	7.92	-40.7	8.09	
1025	100	*	16.33	0.889	0.04	7.91	-70.4	6.94	
1030	100	*	16.49	0.898	0.03	7.90	-78.0	5.27	
1035	100	*	16.62	0.901	0.02	7.91	-84.7	4.22	
1040	100	*	16.68	0.913	0.02	7.90	-89.6	3.46	
1045	100	*	16.78	0.921	0.02	7.89	-94.4	2.92	Sample

JBS 3/5/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21- IP18
Date: 3/6/13

Sampling Personnel: J. Sparey

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4 in QED

Cycles per min: Manual Pressure: 20 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.21 ft

Reference Point: mark

Casing Diameter: 1 in

Total Depth: 14.93 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1340

Sample Time: 1435 Sample ID: 21- IP18 - 030613

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * → casing too narrow for reading

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1345	115	*	15.71	1.792	0.21	7.33	-95.1	41.5	
1350	115	*	15.77	1.811	0.06	7.17	-109.9	43.1	
1355	115	*	15.83	1.838	0.04	7.18	-123.2	35.1	
1400	115	*	16.00	1.861	0.03	7.19	-129.9	40.7	
1405	115	*	15.99	1.866	0.02	7.17	-132.3	25.5	
1410	115	*	16.11	1.876	0.01	7.18	-135.9	19.2	
1415	115	*	16.33	1.885	0.01	7.19	-133.4	14.0	
1420	115	*	16.38	1.894	0.01	7.22	-135.0	9.73	
1425	115	*	16.43	1.902	0.01	7.20	-138.2	6.97	
1430	115	*	16.38	1.907	0.01	7.17	-132.8	6.76	Sample

JH
3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21- IP19 Date: 3/4/13

Sampling Personnel: J. Sperry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: 6 Pressure: 20 PSI Recharge: 7.2 sec Discharge: 2.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.11 ft

Reference Point: Mark

Casing Diameter: 1 in

Total Depth: 12.19 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1540

Sample Time: 1640 Sample ID: 21-IP19-030413

QC Sample Type: MS/MSD QC Sample Time: _____

QC Sample ID: 21-IP19-030413

COMMENTS: * too narrow to fit meter

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1545	80	*	15.42	1.887	3.14	7.24	-98.0	80.5	
1550	80	*	15.72	2.433	0.30	6.95	-95.8	78.6	
1555	80	*	15.97	2.234	0.20	6.99	-107.1	53.2	
1600	80	*	16.19	2.054	0.11	7.08	-123.3	33.0	
1605	80	*	16.23	1.969	0.07	7.12	-128.4	24.7	
1610	80	*	16.27	1.930	0.07	7.13	-133.1	18.7	
1615	80	*	16.25	1.909	0.05	7.15	-135.9	12.9	
1620	80	*	16.28	1.894	0.05	7.15	-136.2	9.46	
1625	80	*	16.24	1.888	0.04	7.17	-138.9	7.55	
1630	80	*	16.20	1.890	0.04	7.16	-139.6	6.27	Ready to Sample

TBS 3/4/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21- IP20
Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 3.0 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 6.6 ppm

Static Depth to Water: 7.54 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 12.72 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1340

Sample Time: 1420 Sample ID: 21- IP20 - 030613

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1348	115	—	15.60	1.397	0.43	7.04	-111.7	4.01	
1353	115	—	15.67	1.422	0.21	7.04	-115.2	2.85	
1358	115	—	15.72	1.458	0.14	7.03	-118.7	2.74	
1403	115	—	15.68	1.482	0.07	7.02	-124.1	1.41	
1408	115	—	15.88	1.516	0.07	7.01	-125.1	1.24	
1413	115	—	16.13	1.540	0.12	7.00	-120.6	0.66	
1418	115	—	16.12	1.549	0.08	7.00	-120.7	0.59	ok to sample (NN)
		7.58	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21-1P30
Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 25 PSI Recharge: 3.0 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.55 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 12.80 ft

SAMPLE INFORMATION

Sample Depth: 9 ft

Purge Start Time: 1445

Sample Time: 1520 Sample ID: 21-1P30-030613

QC Sample Type: DUP QC Sample Time: 1525

QC Sample ID: 21-1P30-030613-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1450	135	–	16.74	1.089	0.55	7.07	-98.0	31.9	
1455	135	–	16.30	0.931	0.29	7.22	-98.4	20.2	
1500	135	–	16.59	0.977	0.12	7.33	-94.6	8.31	
1505	135	–	16.37	1.046	0.07	7.41	-99.8	4.70	
1510	135	–	16.09	1.062	0.05	7.42	-102.2	3.36	
1515	135	–	15.97	1.069	0.04	7.43	-104.9	1.85	ok to sample (NN)
		7.52	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21- IP36
Date: 3/4/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 3.5 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.01 ppm

Static Depth to Water: 7.72 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 10.47 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1351

Sample Time: 1645 Sample ID: 21- IP36- 030413

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1600	100	–	14.88	4.241	2.08	7.38	65.3	85.0	
1605	100	–	14.98	2.203	0.95	7.36	0.7	77.7	
1610	100	–	15.04	1.250	0.51	7.36	-30.2	53.2	
1615	100	–	15.04	0.874	0.32	7.37	-53.3	29.6	
1620	100	–	15.03	0.652	0.30	7.37	-77.6	15.9	
1625	100	–	15.01	0.598	0.17	7.35	-87.1	11.6	
1630	100	–	15.01	0.552	0.14	7.35	-87.2	7.12	
1635	100	–	14.98	0.542	0.13	7.34	-87.7	5.70	
1640	100	–	14.98	0.538	0.13	7.34	-92.6	5.20	OK to sample (NN)
		7.10	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-1P37 Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 3.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.02 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 18.85 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1549

Sample Time: 1635 Sample ID: 21-1P37-030613

QC Sample Type: - QC Sample Time: -

QC Sample ID: -

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1555	100	-	15.23	1.081	0.35	7.24	-107.9	59.1	
1600	100	-	15.27	1.063	0.26	7.21	-126.8	77.1	
1605	100	-	15.31	1.061	0.16	7.21	-135.8	49.7	
1610	100	-	15.36	1.059	0.09	7.21	-142.5	24.8	
1615	100	-	15.39	1.061	0.06	7.22	-145.9	14.5	
1620	100	-	15.38	1.062	0.09	7.23	-145.9	9.70	
1625	100	-	15.39	1.061	0.07	7.23	-146.0	6.83	
1630	100	-	15.37	1.060	0.06	7.24	-147.3	5.58	ok to sample (NN)
		7.78	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW01 Date: 3/6/13

Sampling Personnel: D. Hamer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3.0 sec Discharge: 2.0 sec

WELL INFORMATION

PID Reading: 0.1 ppm

Static Depth to Water: 6.39 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 12.0 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 0922

Sample Time: 0945 Sample ID: 21-MW01-030613

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0930	150	6.41	16.29	0.888	0.04	7.85	69.6	1.0	
0933	150	6.41	16.34	0.871	0.02	7.84	69.3	0.8	
0936	150	6.41	16.36	0.864	0.02	7.85	68.6	0.7	
0939	150	6.41	16.37	0.858	0.01	7.85	68.5	0.5	ok to sample

3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW01B Date: 3/6/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 3.0 sec Discharge: 2.0 sec

WELL INFORMATION

PID Reading: 0.2 ppm

Static Depth to Water: 6.77 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 29.6 ft

SAMPLE INFORMATION

Sample Depth: 26 ft

Purge Start Time: 1014

Sample Time: 1035 Sample ID: 21-MW01B-030613

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1022	160	6.85	16.86	11.42	0.04	7.52	-55.4	1.9	
1025	160	6.86	16.86	11.75	0.02	7.54	-90.6	2.1	
1028	160	6.87	16.88	11.84	0.01	7.54	-99.1	1.9	
1031	160	6.87	16.89	11.85	0.01	7.55	-104.9	1.9	ok to sample PH

3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW02A Date: 3/5/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 10 PSI Recharge: 10 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.39 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 12.1 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 0933

Sample Time: 1015 Sample ID: 21-MW02A-030513

QC Sample Type: dup QC Sample Time: 1016

QC Sample ID: 21-MW02A-030513-D

COMMENTS: cannot gauge while purging - pump blocks access

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0940	130	–	17.31	0.955	0.11	7.47	-118.4	4.4	
0945	130	–	16.79	0.846	0.05	7.38	-129.7	2.8	
0950	130	–	16.72	0.783	0.03	7.36	-134.6	2.7	
0955	130	–							missed reading
1000	130	–	16.81	0.714	0.01	7.34	-138.5	1.6	
1005	130	–	16.85	0.711	0.01	7.34	-139.2	1.1	
1010	130	–	16.87	0.705	0.01	7.33	-138.8	1.0	ok to sample PH

03/05/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW02B Date: 3/5/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 15 PSI Recharge: 10 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.72 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 23.0 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0830

Sample Time: 0918 Sample ID: 21-MW02B-030513

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0835	115	6.75	16.17	1.621	0.16	7.22	73.9	2.9	
0840	115	6.75	16.58	1.441	0.07	7.49	65.1	1.6	
0845	115	6.76	16.80	1.340	0.03	7.78	50.8	1.7	
0850	115	6.77	16.85	1.322	0.02	7.86	42.7	1.1	
0855	115	6.78	17.07	1.294	0.01	7.93	29.4	1.0	
0900	115	6.80	17.18	1.280	0.01	7.95	6.8	1.0	
0905	115	6.80	17.28	1.274	0.01	7.95	-18.2	0.9	
0910	115	6.81	17.28	1.271	0.00	7.95	-26.7	0.8	
0915	115	6.82	17.21	1.261	0.00	7.95	-34.1	0.8	ok to sample

3/5/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW 03A Date: 3/4/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: 6 Pressure: 20 PSI Recharge: 8.8 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.59 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 13.30 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 15:42

Sample Time: 16:20 Sample ID: 21-MW03A-030412

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
15:50	120	unable to measure	16.44	2.168	0.02	7.12	-103.1	4.59	Pump Blocks GW depth monitor
15:55	120		16.25	1.825	0.01	7.09	-114.6	6.66	
16:00	120		16.27	1.692	0.01	7.08	-121.6	5.16	
16:05	120		16.20	1.585	0.01	7.08	-128.0	3.81	
16:10	120		16.28	1.545	0.00	7.08	-130.4	2.80	
16:15	120		16.19	1.539	0.00	7.08	-128.8	2.77	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW03B Date: 3/04/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated ~~mini~~ bladder

Cycles per min: 6 Pressure: 20 PSI Recharge: 8.2 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.55 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 26.14 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 14:36

Sample Time: 15:35 Sample ID: 21-MW03B-030413

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
14:55	190	7.50	17.06	3.358	0.56	7.34	-54.5	10.9	
15:00	190	7.49	17.06	3.642	0.07	7.35	-77.1	8.65	
15:05	190	7.46	17.02	3.975	0.04	7.36	-88.1	6.23	
15:10	190	7.44	17.09	4.262	0.02	7.35	-94.6	5.13	
15:15	190	7.43	17.12	4.430	0.02	7.35	-95.9	5.62	
15:20	190	7.42	17.14	4.559	0.01	7.36	-96.4	5.03	Tide coming in,
15:25	190	7.41	17.14	4.659	0.01	7.36	-98.8	8.06	water level increasing,
15:30	190	7.40	17.16	4.695	0.01	7.36	-99.9	4.59	conductivity increasing.
									ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21-MW04A
Date: 3/5/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: MN Pressure: 20 PSI Recharge: 8.0 sec Discharge: 0.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.61 ft

Reference Point: Sharpie

Casing Diameter: 2 in

Total Depth: 12.10 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 0826

Sample Time: 0900 Sample ID: 21-MW04A-030513

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Pump obstructed DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0834	100	—	14.97	12.14	0.67	7.51	-28.8	17.5	
0839	100	—	15.01	11.53	0.62	7.55	-66.1	8.76	
0844	100	—	15.04	11.03	0.52	7.56	-91.2	4.79	
0849	100	—	15.17	10.76	0.37	7.58	-112.2	2.82	
0854	100	—	15.16	10.74	0.34	7.57	-109.0	2.95	
0859	100	—	15.18	10.75	0.38	7.59	-103.3	2.04	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW04B Date: 3/4/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: 6 Pressure: 20 PSI Recharge: 8.2 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.72 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 26.51 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 16:35

Sample Time: 17:20 Sample ID: 21-MW 04B-030413

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
16:50	100	6.70	15.65	8.355	0.02	7.19	-63.5	18.6	
16:55	100	6.69	15.79	8.499	0.01	7.23	-55.0	13.8	
17:00	100	6.68	15.84	8.529	0.01	7.23	-50.8	10.3	
17:05	100	6.63	15.90	8.546	0.01	7.24	-46.0	8.71	
17:10	100	6.61	15.93	8.557	0.01	7.25	-43.0	9.34	
17:15	100	6.62	15.91	8.566	0.01	7.26	-41.3	8.17	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW05 Date: 3/4/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: MN Pressure: 20 PSI Recharge: 6.5 sec Discharge: 0.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.26 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 11.61 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1702

Sample Time: 1755 Sample ID: 21-MW05-030413

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1707	155	–	15.26	30.57	3.56	6.30	59.7	241	
1712	155	–	15.25	32.65	3.29	6.00	101.9	150	
1717	155	–	15.22	33.20	3.08	5.88	120.9	74.3	
1722	155	–	15.23	33.52	2.84	5.80	138.9	40.3	
1727	155	–	15.22	33.71	2.76	5.76	149.8	27.5	
1732	155	–	15.22	33.88	2.70	5.73	160.4	18.8	
1737	155	–	15.23	33.96	2.65	5.73	167.6	16.4	
1742	155	–	15.24	34.06	2.61	5.72	173.9	9.87	
1747	155	–	15.21	34.09	2.60	5.68	175.9	6.60	
1752	155	–	15.20	34.10	2.61	5.61	183.4	7.32	OK to Sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW07A1 Date: 3/5/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: MN Pressure: 25 PSI Recharge: 8.0 sec Discharge: 2.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.80 ft

Reference Point: Sharpie

Casing Diameter: 2 in

Total Depth: 10.72 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 0912

Sample Time: 0945 Sample ID: 21-MW07A1-030513

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Pump obstructed DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0918	100	—	13.44	33.30	1.19	6.70	25.7	4.06	
0923	100	—	13.48	38.08	2.60	6.87	59.4	4.00	
0928	100	—	13.52	38.23	2.36	6.92	71.3	3.69	
0933	100	—	13.57	38.27	2.34	6.92	78.5	1.76	
0938	100	—	13.65	38.29	2.28	6.93	80.9	1.62	
0943	100	—	13.66	38.30	2.25	6.92	82.1	1.20	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW07 A2 Date: 3/5/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: MN Pressure: 25 PSI Recharge: 10.0 sec Discharge: 0.6 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.33 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 15.60 ft

SAMPLE INFORMATION

Sample Depth: ? ft

Purge Start Time: 0953

Sample Time: 1040 Sample ID: 21-MW07A2-030513

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1000	145	7.43	14.99	15.91	3.35	7.63	-95.9	70.4	
1005	145	7.45	15.07	14.71	2.92	7.66	-107.9	56.0	
1010	145	7.49	15.12	14.23	2.55	7.67	-115.8	34.9	
1015	145	7.52	15.17	14.23	2.23	7.67	-117.8	21.2	
1020	145	7.53	15.20	14.34	1.98	7.66	-126.8	14.4	
1025	145	7.59	15.23	14.49	1.69	7.66	-129.6	9.87	
1030	145	7.61	15.29	14.57	1.47	7.65	-128.1	7.10	
1035	145	7.62	15.32	14.66	1.44	7.64	-137.8	6.69	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW07A3 Date: 3/5/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: MN Pressure: 30 PSI Recharge: 9.0 sec Discharge: 0.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.77 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 20.05 ft

SAMPLE INFORMATION

Sample Depth: ? ft

Purge Start Time: 1053

Sample Time: 1125 Sample ID: 21-MW07A3-030513

QC Sample Type: DUP QC Sample Time: 1130

QC Sample ID: 21-MW07A3-030513-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1100	100	7.81	16.08	14.32	0.87	7.58	-116.7	21.2	
1105	100	7.83	16.08	14.39	0.79	7.63	-119.7	15.8	
1110	100	7.87	15.99	14.47	0.69	7.65	-129.9	9.00	
1115	100	7.87	15.91	14.44	0.61	7.63	-133.0	8.30	
1120	100	7.90	15.89	14.36	0.63	7.62	-131.7	7.74	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW07B Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 50 PSI Recharge: 7.7 sec Discharge: 4.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.34 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 23.64 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0915

Sample Time: 1005 Sample ID: 21-MW07B-030613

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0922	100	6.47	14.90	10.73	2.16	7.57	84.3	23.3	
0927	100	6.50	15.25	11.00	1.58	7.43	-92.9	12.1	
0932	100	6.56	15.43	11.12	1.38	7.39	-116.4	8.50	
0937	100	6.60	15.53	11.24	1.05	7.36	-123.3	7.81	
0942	100	6.64	15.62	11.39	0.88	7.35	-127.4	5.08	
0947	100	6.69	15.72	11.64	0.80	7.34	-130.1	4.30	
0952	100	6.75	15.80	11.93	0.69	7.34	-132.7	2.54	
0957	100	6.80	15.84	12.10	0.67	7.34	-133.8	2.01	
1002	100	6.84	15.87	12.20	0.63	7.35	-135.0	2.20	ok to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW08A Date: 3/6/13

Sampling Personnel: P. Hammer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.1 ppm

Static Depth to Water: 6.06 ft

Reference Point: mark

Casing Diameter: 1 in

Total Depth: 9.9 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1351

Sample Time: 1430 Sample ID: 21-MW08A-030613

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1358	140	6.25	16.05	1.743	0.30	7.65	-69.3	16	
1401	140	6.22	15.73	0.877	0.32	7.57	-58.6	12	
1404	140	6.24	15.62	0.527	0.33	7.50	-54.7	8.1	
1407	140	6.26	15.62	0.360	0.33	7.43	-47.0	5.0	
1410	140	6.29	15.67	0.273	0.33	7.37	-41.2	4.2	
1413	140	6.28	15.74	0.241	0.33	7.34	-38.3	2.1	
1416	140	6.27	15.80	0.220	0.33	7.31	-35.5	1.8	
1419	140	6.30	15.82	0.212	0.32	7.30	-35.0	1.5	
1422	140	6.31	15.73	0.206	0.33	7.28	-33.4	1.3	
1425	140	6.28	15.76	0.205	0.32	7.28	-31.3	1.2	ok to sample pd

3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW08B Date: 3/6/13

Sampling Personnel: P. Hammer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 5.0 sec Discharge: 2.0 sec

WELL INFORMATION

PID Reading: 0.1 ppm

Static Depth to Water: 6.22 ft

Reference Point: TOC

Casing Diameter: 1" in

Total Depth: 28.5 ft

SAMPLE INFORMATION

Sample Depth: 26 ft

Purge Start Time: 1240

Sample Time: 1315 Sample ID: 21-MW08B-030613

QC Sample Type: none QC Sample Time: ~

QC Sample ID: ~

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1245	120	6.33	16.30	5.361	0.08	7.64	-58.1	8.4	
1250	120	6.35	16.37	6.201	0.02	7.69	-89.6	3.5	
1255	120	6.34	16.36	6.457	0.01	7.72	-103.6	2.7	
1300	120	6.37	16.34	6.506	0.01	7.75	-105.2	1.6	
1305	120	6.38	16.34	6.496	0.00	7.78	-110.7	1.2	
1310	120	6.38	16.33	6.476	0.00	7.80	-118.2	1.1	ok to sample PH

3/6/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21-MW09A
Date: 3/6/13

Sampling Personnel: J. Spenry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: manual Pressure: 20 PSI Recharge: 4 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.08 ft

Reference Point: Mark

Casing Diameter: 1 in

Total Depth: 10.15 ft

SAMPLE INFORMATION

Sample Depth: ~9 ft

Purge Start Time: 1455

Sample Time: 1540 Sample ID: 21-MW09A-030613

QC Sample Type: Dup QC Sample Time: 1545

QC Sample ID: 21-MW09A-030613-D

COMMENTS: * 1 in well, too small for probe

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1505	100	*	16.01	1.317	0.29	7.04	-82.8	117	
1510	100	*	15.58	1.309	0.08	6.89	-79.3	90.6	
1515	100	*	15.18	1.298	0.05	6.85	-63.9	40.5	
1520	100	*	14.92	1.268	0.06	6.81	-65.7	13.4	
1525	100	*	15.02	1.255	0.05	6.89	-92.3	7.10	
1530	100	*	14.95	1.245	0.04	6.90	-94.7	3.56	
1535	100	*	14.87	1.235	0.03	6.89	-94.3	2.52	Sample

JS 3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW09B Date: 3/4/13

Sampling Personnel: J. Spary

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" pump

Cycles per min: 6 Pressure: 25 PSI Recharge: 6.8 sec Discharge: 3.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.30 ft

Reference Point: mark

Casing Diameter: ~~0.75~~ 1 in

Total Depth: 29.68 ft

SAMPLE INFORMATION

Sample Depth: 26 ft

Purge Start Time: 1440

Sample Time: 1520 Sample ID: 21-MW09B-030413

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1447	100	7.30	16.17	10.26	1.74	7.46	-36.3	7.85	
1452	100	7.30	16.55	12.13	0.17	7.31	-80.8	9.63	
1500	100	7.30	16.72	14.32	0.07	7.33	-100.6	7.34	
1505	100	7.31	16.73	14.61	0.06	7.35	-106.2	8.32	
1510	100	7.30	16.70	14.80	0.05	7.35	-103.9	6.24	
1515	100	7.30	16.68	14.85	0.04	7.36	-102.3	4.85	Stable

JGS 3/4/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW10A Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 3.1 sec Discharge: 0.9 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.08 ft

Reference Point: Sharpie

Casing Diameter: 1 in

Total Depth: 10.42 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1130

Sample Time: 1225 Sample ID: 21-MW10A-030613

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1136	100	–	17.07	7.935	0.34	7.31	-115.4	191	
1141	100	–	16.62	4.081	0.28	7.23	-123.0	110	
1146	100	–	16.52	2.180	0.22	7.22	-128.3	58.3	
1151	100	–	16.45	1.311	0.19	7.20	-131.7	24.5	
1156	100	–	16.43	0.935	0.13	7.20	-134.0	22.5	
1201	100	–	16.41	0.767	0.13	7.19	-131.1	11.3	
1206	100	–	16.41	0.705	0.16	7.18	-131.4	3.21	
1211	100	–	16.41	0.678	0.18	7.17	-129.4	1.65	
1216	100	–	16.44	0.666	0.23	7.16	-127.2	1.31	
1221	100	–	16.43	0.662	0.24	7.16	-125.7	0.81	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW10B Date: 3/6/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 30 PSI Recharge: 3.2 sec Discharge: 0.9 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 26 ft
Static Depth to Water: 7.11 ft	Purge Start Time: 1044
Reference Point: Sharpie	Sample Time: 1115 Sample ID: 21-MW10B-030613
Casing Diameter: 1 in	QC Sample Type: — QC Sample Time: —
Total Depth: 29.93 ft	QC Sample ID: —

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1050	120	—	16.39	11.14	0.51	7.40	-94.3	8.15	
1055	120	—	17.18	11.47	0.28	7.51	-107.1	4.06	
1100	120	—	17.37	12.03	0.13	7.55	-114.8	1.82	
1105	120	—	17.45	12.20	0.10	7.55	-118.5	1.05	
1110	120	—	17.50	12.29	0.09	7.55	-117.9	0.97	ok to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21- MW 11A Date: 3/5/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 3 sec Discharge: 1.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.65 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 10.09 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 08:29

Sample Time: 09:30 Sample ID: 21-MW11A-030513

QC Sample Type: MS/MSD QC Sample Time: 09:30

QC Sample ID: 21-MW11A-030513

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
08:50	120	6.76	13.82	0.735	0.01	7.29	88.9	13.4	
08:55	120	6.76	14.18	0.576	0.01	7.16	90.6	3.95	
09:00	120	6.76	14.31	0.575	0.01	7.14	93.2	2.55	
09:05	120	6.77	14.34	0.594	0.01	7.11	95.4	1.57	
09:10	120	6.76	14.38	0.628	0.01	7.08	98.1	1.03	
09:15	120	6.76	14.33	0.660	0.01	7.06	100.4	0.55	
09:20	120	6.76	14.37	0.678	0.01	7.06	102.9	0.89	
09:25	120	6.76	14.37	0.680	0.01	7.06	104.3	0.44	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW11B Date: 3/5/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non dedicated mini bladder

Cycles per min: MN Pressure: 30 PSI Recharge: 3.0 sec Discharge: 1.7 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.13 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 28.61 ft

SAMPLE INFORMATION

Sample Depth: 26 ft

Purge Start Time: 10:14

Sample Time: 10:55 Sample ID: 21-MW11B-030513

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
10:25	170	7.26	16.77	15.38	0.00	7.44	115.8	2.50	
10:30	170	7.26	17.32	17.05	0.00	7.49	103.1	1.59	
10:35	170	7.26	17.35	17.73	0.00	7.53	85.4	1.18	
10:40	170	7.29	17.49	17.85	0.00	7.54	75.4	1.06	
10:45	170	7.31	17.53	17.91	0.00	7.55	68.8	1.29	
10:50	170	7.31	17.46	17.95	0.00	7.56	65.9	0.91	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21-MW12 Date: 3/6/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.3 ppm

Static Depth to Water: 6.22 ft

Reference Point: Mark

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1119

Sample Time: 1153 Sample ID: 21-MW12-030613

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1125	145	6.30	15.69	4.717	0.04	7.64	-103.7	5.3	
1128	145	6.32	15.55	2.871	0.05	7.68	-96.3	3.6	
1131	145	6.31	15.48	1.860	0.04	7.70	-87.9	2.0	
1134	145	6.32	15.44	1.473	0.04	7.71	-80.5	1.3	
1137	145	6.33	15.42	1.246	0.03	7.69	-73.0	0.8	
1140	145	6.32	15.41	1.111	0.03	7.67	-63.0	0.6	
1143	145	6.32	15.41	1.094	0.03	7.67	-58.3	0.5	
1146	145	6.32	15.40	1.074	0.03	7.66	-53.7	0.5	
1149	145	6.34	15.40	1.061	0.03	7.66	-50.3	0.5	ok to sample pg

3/6/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 21- MW 13 Date: 3/4/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 30 PSI Recharge: 6.5 sec Discharge: 2.0 sec

WELL INFORMATION

PID Reading: 0.06 ppm

Static Depth to Water: 6.89 ft

Reference Point: Sharpie

Casing Diameter: 1 in

Total Depth: 10.28 ft

SAMPLE INFORMATION

Sample Depth: 8 ft

Purge Start Time: 1442

Sample Time: 1520 Sample ID: 21-MW13-030413

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1455	100	—	15.39	14.65	2.51	7.75	81.6	1.14	
1500	100	—	15.30	14.55	2.57	7.74	81.6	0.90	
1505	100	—	15.22	14.51	2.67	7.75	82.8	0.57	
1510	100	—	15.17	14.50	2.69	7.74	86.8	0.45	
1515	100	—	15.14	14.45	2.78	7.74	88.6	0.33	OK to sample (NN)
		6.91	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 21-MW-14
Date: 3/5/13

Sampling Personnel: J. Spency

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4 inch

Cycles per min: manual Pressure: 19 PSI Recharge: 4 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 6.53 ft
Reference Point: Mark
Casing Diameter: 1 in
Total Depth: 10.10 ft

SAMPLE INFORMATION

Sample Depth: 8 ft
Purge Start Time: 825
Sample Time: 920 Sample ID: 21-MW14-030513
QC Sample Type: – QC Sample Time: –
QC Sample ID: –

COMMENTS: * 1 inch well, too narrow for meter
Water in flow-thru, not enough for sample

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
835	65	*	13.17	0.966	1.31	7.88	76.9	#	
840	65	*	13.24	0.958	0.38	7.80	81.8	5.03	
850	75	*	12.90	0.929	0.35	7.74	84.0	3.49	
855	75	*	12.66	0.923	0.34	7.68	86.5	5.31	
900	75	*	13.07	0.903	0.33	7.69	86.0	5.09	
905	80	*	13.51	0.884	0.31	7.69	86.0	4.76	
910	105	*	13.71	0.876	0.31	7.68	86.3	4.30	
915	105	*	14.15	0.888	0.28	7.70	83.9	3.61	Sample

HBS 3/5/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB108 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 1.5 ppm

Static Depth to Water: 8.73 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 24 ft

Purge Start Time: 0857

Sample Time: 0925 Sample ID: 24-BB108-031213

QC Sample Type: DUP QC Sample Time: 0930

QC Sample ID: 24-BB108-031213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0905	100	–	14.62	2.444	0.08	6.96	319.0	172	
0908	100	–	14.87	2.478	0.03	6.99	294.6	73.4	
0911	100	–	15.30	2.480	0.03	7.00	274.0	45.2	
0914	100	–	15.51	2.484	0.02	7.01	261.1	44.8	
0917	100	–	15.69	2.484	0.03	7.02	253.0	44.2	
0920	100	–	15.75	2.485	0.03	7.02	251.8	43.7	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB37 Date: 03/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non-dedicated mini bladder

Cycles per min: Mn Pressure: 35 PSI Recharge: 0.9 sec Discharge: 6.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.52 ft

Reference Point: TOC

Casing Diameter: 3/4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0940

Sample Time: 1025 Sample ID: 24-BB37-031213

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

Final DTW: 8.54

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
955	150	—	14.860	2.398	0.62	6.97	-124.4	17.0	
1000	150	—	14.96	2.459	0.37	7.02	-123.8	26.0	
1005	150	—	15.49	3.729	0.34	7.13	-128.5	26.0	
1010	150	—	15.78	4.925	0.32	7.17	-123.9	24.0	
1015	150	—	15.78	4.965	0.30	7.16	-126.0	24.0	
1020	150	—	15.79	5.011	0.21	7.16	-126.4	22.0	ok to sample

Justin Morse

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB38 Date: 3/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: _____ Pressure: 35 PSI Recharge: 4 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.41 ft

Reference Point: TOC

Casing Diameter: 3/4 in in

Total Depth: 31.6 ft

SAMPLE INFORMATION

Sample Depth: 30 ft

Purge Start Time: 1107

Sample Time: 1140 Sample ID: 24-BB38-031213

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1110	150	8.41	16.10	4.769	0.51	6.89	-103.5	~~22.0~~	160
1115	150	8.40	16.22	4.748	0.29	6.88	-101.4	130	
1120	150	8.38	16.49	4.945	0.16	6.81	-94.9	40	
1125	150	8.35	16.70	5.206	0.13	6.79	-91.1	35	
1130	150	8.32	16.83	5.302	0.11	6.79	-90.8	35	
1135	150	8.29	16.84	5.325	0.11	6.80	-89.3	32	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB40 Date: 3/7/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 5.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.70 ft

Reference Point: TOC

Casing Diameter: 3/4 in

Total Depth: 29.5 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 0826

Sample Time: 0847 Sample ID: 24-BB40-030713

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS: cannot gauge water level while purging - casing too small

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0835	130	—	16.01	5.215	0.02	7.01	-110.4	14	
0838	130	—	16.12	5.279	0.02	7.00	-114.9	8.8	
0841	130	—	16.20	5.300	0.01	6.99	-117.1	7.3	
0844	130	—	16.24	5.283	0.01	6.97	-117.9	6.5	ok to sample pH

3/7/13

TREVET

.22C

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-BB42
Date: 3/7/13

Sampling Personnel: J. Spaw y

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: man Pressure: 30 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.051 ppm ABS
Static Depth to Water: ~~9.42~~ 8.42 ft
Reference Point: none
Casing Diameter: 3/4 in
Total Depth: 38.20 ft

SAMPLE INFORMATION

Sample Depth: 25 ft
Purge Start Time: 825
Sample Time: 910 Sample ID: 24-BB42-030713
QC Sample Type: — QC Sample Time: —
QC Sample ID: —

COMMENTS: * well too narrow for probe

Final WL → 8.72

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
830	140	*	15.39	7.527	0.96	6.85	-103.9	103	
840	140	*	16.45	7.502	0.04	6.87	-138.7	29.7	
845	140	*	16.57	7.546	0.04	6.87	-141.8	20.5	
850	140	*	16.60	7.552	0.04	6.87	-144.5	13.9	
855	140	*	16.50	7.541	0.04	6.86	-145.4	8.63	
900	140	*	16.56	7.496	0.04	6.85	-152.5	5.76	
903	140	*	16.63	7.443	0.03	6.87	148.8	4.46	Sample

ABS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB63 Date: 3/7/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 30 PSI Recharge: 1.5 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.11 ft

Reference Point: TOC

Casing Diameter: 3/4" in

Total Depth: 29.1 ft

SAMPLE INFORMATION

Sample Depth: 21 ft

Purge Start Time: 1247

Sample Time: 1328 Sample ID: 24-BB63-030713

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:
cannot gauge water level while purging - casing too small

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1252	225	—	16.06	3.177	0.01	7.35	-137.7	900	
1255	225	—	15.89	1.269	0.01	7.46	-139.1	330	
1300	225	—	15.84	0.644	0.00	7.44	-133.2	75	
1305	225	—	15.86	0.575	0.00	7.35	-125.8	36	
1310	225	—	15.91	0.592	0.00	7.29	-122.5	24	
1315	225	—	16.02	0.625	0.00	7.24	-120.0	14	
1320	225	—	15.88	0.651	0.00	7.21	-118.7	10	
1323	225	—	15.88	0.656	0.00	7.20	-115.5	10	
1326	225	—	15.83	0.662	0.00	7.19	-115.7	9	ok to sample

3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB76 Date: 3/6/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.81 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: 21 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 11:25

Sample Time: 1200 Sample ID: 24-BB76-030613

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
11:35	120	unable ☆ to measure	16.35	1.765	0.00	6.80	104.7	5.15	
11:40	120		16.30	1.709	0.00	6.80	104.8	3.89	
11:45	120		16.31	1.680	0.00	6.82	105.0	5.80	
11:50	120		16.25	1.649	0.00	6.83	103.7	4.08	
~~1100~~ 1155	120		16.24	1.632	0.00	6.82	104.4	3.76	ok to sample

☆ well casing too small for GW depth monitor and pump tubing

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB78 Date: 3/6/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.63 ft

Reference Point: TOC

Casing Diameter: 1/2 ID in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 15 ft

Purge Start Time: 1215

Sample Time: 1245 Sample ID: 24-BB78-030613

QC Sample Type: MS/MSD QC Sample Time: -

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
12:20	105	Unable to measure	16.75	2.550	0.00	6.74	108.2	66.6	
12:25	105		16.58	2.550	0.00	6.74	91.3	59.0	
12:30	105		16.61	2.595	0.00	6.75	81.7	51.0	
12:35	105		16.60	2.610	0.00	6.75	74.2	52.7	
12:40	105		16.68	2.646	0.00	6.76	72.6	47.9	ok to sample

Jonathan Mercer

TREVET

0.417 gal x 3 = 1.25 = 4,731 mL 3/4 in pipe = 0.023 gal/ft.

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB94 Date: 3/5/13

Sampling Personnel: J. Spence

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 30 PSI Recharge: 5 sec Discharge: 2.5 sec

WELL INFORMATION

PID Reading: 0.610 ppm

Static Depth to Water: 6.80 ft

Reference Point: none

Casing Diameter: 0.75 in

Total Depth: 24.94 ft

SAMPLE INFORMATION

Sample Depth: 20' ft

Purge Start Time: 1254

Sample Time: 1420 Sample ID: 24-BB94-030513

QC Sample Type: MS/MSD QC Sample Time: _____

QC Sample ID: —

COMMENTS: * Well casing too narrow to get water level

OR - out of Range Ambient PID readings b/w 0.300 + ~ 3.000

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1300	100	*	16.38	2.110	0.11	7.27	-133.0	OR	
1310	100	*	16.61	2.799	0.01	7.29	-155.1	OR	
1315	100	*	16.67	3.263	0.01	7.30	-161.2	994	
1320	100	*	16.68	3.394	0.02	7.31	-165.4	624	
1325	100	*	16.70	3.497	0.02	7.32	-167.4	325	
1330	100	*	16.70	3.539	0.02	7.32	-168.5	187	
1335	100	*	16.71	3.574	0.01	7.32	-169.4	175	
1340	100	*	16.71	3.598	0.01	7.33	-170.3	139	
1345	100	*	16.72	3.620	0.01	7.33	-171.2	119	
1350	100	*	16.72	3.654	0.01	7.33	-172.0	88.4	
1355	100	*	16.72	3.677	0.01	7.33	-172.7	69.3	
1400	100	*	16.73	3.695	0.01	7.33	-170.7	84.8	
1405	100	*	16.74	3.698	0.01	7.33	-172.5	52.7	
1410	100	*	16.74	3.691	0.01	7.33	-173.4	91.8	

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-BB96 Date: 3/5/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 30 PSI Recharge: 5.0 sec Discharge: 0.7 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.92 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 20.17 ft

SAMPLE INFORMATION

Sample Depth: 16 ft

Purge Start Time: 1252

Sample Time: 1410 Sample ID: 24-BB96-030513

QC Sample Type: MS/MSD QC Sample Time: 1410

QC Sample ID: Same as primary

COMMENTS: Casing too small to get DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1300	100	–	16.16	4.300	0.37	7.36	-130.0	723	
1305	100	–	16.10	2.335	0.30	7.36	-130.6	445	
1310	100	–	16.10	1.772	0.28	7.36	-122.0	256	
1315	100	–	16.10	1.429	0.24	7.35	-118.0	150	
1320	100	–	16.09	1.268	0.22	7.33	-116.2	79.6	
1325	100	–	16.10	1.216	0.20	7.33	-121.8	49.2	
1330	100	–	16.10	1.195	0.18	7.32	-120.1	33.4	
1335	100	–	16.09	1.185	0.16	7.32	-125.2	31.7	
1340	100	–	16.11	1.179	0.16	7.32	-126.1	23.1	
1345	100	–	16.14	1.176	0.15	7.31	-123.5	19.2	
1350	100	–	16.14	1.175	0.14	7.31	-125.6	14.4	
1355	100	–	16.14	1.175	0.19	7.31	-124.8	11.2	
1400	100	–	16.12	1.175	0.15	7.31	-119.4	11.3	
1405	100	–	16.12	1.175	0.14	7.31	-121.0	10.8	ok to sample (NN)
		6.90	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW11 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.2 ppm

Static Depth to Water: 6.54 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 19 ft

Purge Start Time: 1320

Sample Time: 1350 Sample ID: 24-EW11-031213

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1330	300	6.56	16.29	2.355	0.01	7.49	139.6	53.9	
1333	300	6.57	16.26	2.212	0.01	7.51	140.5	49.9	
1336	300	6.57	16.15	2.055	0.01	7.48	143.6	35.5	
1339	300	6.57	16.20	2.204	0.01	7.51	146.2	28.3	
1342	300	6.58	16.21	2.201	0.01	7.51	146.5	27.1	
1345	300	6.58	16.22	2.194	0.01	7.51	147.0	27.5	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW 12 Date: 03/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: MA Pressure: 38 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.54 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 19 ft

Purge Start Time: 0852

Sample Time: 0920 Sample ID: 24-EW12-031213

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0855	280	6.59	17.04	2.814	0.36	6.88	-98.5	23.0	
0900	280	6.59	17.45	2.874	0.34	6.90	-121.9	8.30	
0905	280	6.59	17.60	2.884	0.12	6.91	-127.2	5.50	
0910	280	6.59	17.62	2.886	0.10	6.91	-128.6	5.80	
0915	280	6.59	17.62	2.886	0.07	6.91	-128.6	4.20	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW18 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.03 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 0952

Sample Time: 1015 Sample ID: 24-EW18-031213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0957	300	8.05	17.15	8.530	0.03	6.60	219.4	17.3	
1000	300	8.05	17.53	9.404	0.02	6.60	217.8	3.59	
1003	300	8.05	17.65	9.576	0.01	6.60	215.5	1.21	
1006	300	8.05	17.69	9.618	0.01	6.61	214.3	0.74	
1009	300	8.05	17.68	9.644	0.01	6.60	213.4	0.52	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW30 Date: 3/7/13

Sampling Personnel: J. Sperry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: Man Pressure: 24 PSI Recharge: 3 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.73 ft

Reference Point: cut

Casing Diameter: 4 in

Total Depth: 29.23 ft

SAMPLE INFORMATION

Sample Depth: _____ ft

Purge Start Time: 1600

Sample Time: 1705 Sample ID: 24-EW30-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1603	150	5.73	15.15	4.918	0.60	6.81	-38.0	25.1	
1608	150	5.74	15.50	5.985	0.04	6.72	-54.9	2.85	
1613	150	5.74	15.45	5.999	0.03	6.72	-61.0	13.6	
1618	150	5.74	15.51	5.967	0.02	6.72	-66.6	37.3	
1623	210	5.75	15.68	5.919	0.02	6.73	-69.2	137	Turned pump up R→2 sec D→2 sec
1628	210	5.75	15.85	5.880	0.01	6.74	-72.0	106	
1633	210	5.75	15.90	5.827	0.01	6.74	-74.8	52.6	
1638	210	5.75	15.91	5.801	0.01	6.74	-77.0	25.4	
1643	210	5.76	15.91	5.773	0.01	6.74	-79.4	15.4	
1648	210	5.76	15.91	5.738	0.01	6.74	-80.3	11.8	
1653	210	5.76	15.88	5.699	0.01	6.75	-81.7	9.48	
1656	210	5.76	15.88	5.674	0.01	6.74	-82.0	9.78	
1659	210	5.76	15.90	5.638	0.01	6.75	-82.7	9.71	Sample

MS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW32 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.27 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1421

Sample Time: 1445 Sample ID: 24-EW32-031213

QC Sample Type: DUP QC Sample Time: 1450

QC Sample ID: 24-EW32-031213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1430	320	7.29	16.88	6.013	0.01	6.76	166.1	4.68	
1433	320	7.29	16.90	5.921	0.01	6.77	163.9	5.23	
1436	320	7.29	16.90	5.852	0.01	6.78	161.5	4.96	
1439	320	7.29	16.93	5.845	0.01	6.78	160.0	4.75	
1442	320	7.30	17.01	5.834	0.03	6.78	158.6	4.54	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW33 Date: 3/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: mini non dedicated bladder

Cycles per min: MN Pressure: 40 PSI Recharge: 4 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.55 ft

Reference Point: TOC/sharpie

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 23 ft

Purge Start Time: 1630

Sample Time: 1705 Sample ID: 24-EW33-031113

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1635	220	7.57	15.89	4.843	0.98	6.74	-82.5	5.60	
1640	220	7.57	15.45	4.030	0.62	6.77	-94.4	16.0	
1645	220	7.58	15.22	3.590	0.41	6.78	-103.9	8.50	
1650	220	7.58	15.18	3.467	0.33	6.78	-105.5	6.50	
1655	220	7.58	15.14	3.415	0.30	6.78	107.3	7.30	
1700	220	7.58	15.14	3.397	0.31	6.78	106.5	6.40	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW34 Date: 3/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: MA Pressure: 40 PSI Recharge: 4.0 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.84 ft

Reference Point: TOC/sharpie

Casing Diameter: 4 in

Total Depth: 31.05 ft

SAMPLE INFORMATION

Sample Depth: ~~19~~ 24 ft

Purge Start Time: 1532

Sample Time: 1605 Sample ID: 24-EW34-031113

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1540	150	7.85	16.78	5.823	0.95	6.65	-66.1	50	
1545	150	7.85	16.75	5.975	0.50	6.65	-57.1	38	
1550	150	7.85	16.73	6.026	0.36	6.65	-49.3	4.80	
1555	150	7.85	16.66	6.052	0.32	6.65	-49.2	6.90	
1600	150	7.85	16.66	6.058	0.29	6.65	-47.0	6.50	ok to sample

Justin Merco

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW-36 Date: 3/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 2 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.49 ft

Reference Point: TOC/Survey mark

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1741

Sample Time: 1805 Sample ID: 24-EW-36-031113

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1750	300	~~5.30~~ 5.56	16.74	1.272	0.01	7.07	146.8	10.0	
1753	300	5.57	17.28	1.275	0.01	7.10	145.1	4.50	
1756	300	5.57	17.34	1.277	0.01	7.11	144.5	3.21	
1759	300	5.57	17.35	1.277	0.01	7.12	143.4	2.75	
1802	300	5.57	17.36	1.278	0.01	7.12	142.6	2.51	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-EW 4
Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 5.83 ft
Reference Point: TOC
Casing Diameter: 4 in
Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 16 ft
Purge Start Time: 1129
Sample Time: 1155 Sample ID: 24-EW4-031213
QC Sample Type: DUP QC Sample Time: 1200
QC Sample ID: 24-EW4-031213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1135	100	5.97	16.67	3.780	0.02	6.79	190.0	6.99	
1138	100	6.02	16.82	3.568	0.01	6.79	187.8	5.73	
1141	100	6.06	16.90	3.421	0.01	6.79	185.4	4.82	
1144	100	6.09	16.93	3.299	0.01	6.79	182.5	4.57	
1147	100	6.11	16.93	3.252	0.01	6.79	181.0	4.35	
1150	100	6.14	16.96	3.212	0.01	6.79	179.2	4.12	Parameters stable, ok to Sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW5 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.90 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 30.33 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 1231

Sample Time: 1300 Sample ID: 24-EW5-030713

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1236	115	6.02	16.16	1.800	0.05	6.86	-99.5	2.47	
1241	115	6.15	16.17	1.973	0.09	6.68	-101.8	2.17	Adjust flow rate
1246	100	6.26	16.21	1.988	0.08	6.67	-104.0	3.58	Flow rate set
1251	100	6.35	16.21	1.993	0.07	6.67	-107.0	3.10	
1256	100	6.47	16.26	1.993	0.06	6.67	-107.9	3.08	OK to sample NN

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-EW6 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 35 PSI Recharge: 3.1 sec Discharge: 0.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.70 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 29.03 ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 1616

Sample Time: 1640 Sample ID: 24-EW6-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1620	175	5.89	17.13	4.489	0.14	6.62	-125.3	6.16	
1624	175	5.85	17.05	4.473	0.12	6.62	-126.0	4.33	
1628	175	5.85	16.98	4.466	0.11	6.62	-125.4	3.35	
1632	175	5.85	17.02	4.457	0.10	6.62	-125.7	4.08	
1638	175	5.85	16.99	4.460	0.09	6.62	-127.2	3.79	OK to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24 - EW 8 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 40 PSI Recharge: 2.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.66 ft

Reference Point: Sharpie

Casing Diameter: 4 in

Total Depth: 29.34 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 1101

Sample Time: 1120 Sample ID: 24-EW8-030712

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1105	305	5.70	17.16	1.790	0.09	6.97	-123.7	4.70	
1108	305	5.70	17.40	1.559	0.05	7.10	-126.0	3.92	
1111	305	5.70	17.45	1.552	0.04	7.13	-126.6	2.89	
1114	305	5.70	17.48	1.518	0.03	7.14	-127.7	1.97	
1117	305	5.70	17.51	1.519	0.02	7.14	-126.9	2.09	OK to sample NN

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-IW11 Date: 3/7/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.41 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 19 ft

Purge Start Time: 0940

Sample Time: 1010 Sample ID: 24-IW11-030713

QC Sample Type: — QC Sample Time: _____

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0945	225	6.96	15.45	2.152	0.0	6.99	162.5	49.1	
0950	225	7.04	15.46	2.321	0.00	7.02	151.9	41.3	
0955	225	7.04	15.48	2.329	0.00	7.02	147.0	38.2	
1000	225	7.04	15.58	2.337	0.00	7.03	142.3	37.2	
1005	225	7.04	15.61	2.337	0.00	7.03	138.7	35.2	ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-IW14
Date: 3/7/13

Sampling Personnel: GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" PORTABLE BLADDER

Cycles per min: MAN Pressure: 20 PSI Recharge: 4 sec Discharge: 1.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.82 ft

Reference Point: TOC PVC

Casing Diameter: 4" in

Total Depth: 27.60 ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 1530

Sample Time: 1605 Sample ID: 24-IW14-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1530	120	6.85	15.10	1.926	0.01	7.03	135.1	5.35	
1537	110	6.85	15.20	1.479	0.01	7.01	136.9	5.51	
1542	130	6.85	15.26	1.180	0.00	6.98	138.7	5.16	
1547	135	6.85	15.40	0.976	0.00	6.97	139.8	5.61	
1552	135	6.85	15.51	0.910	0.00	6.96	140.9	4.65	
1555	135	6.85	15.55	0.888	0.00	6.95	141.7	4.96	
1559	135	6.85	15.55	0.882	0.00	6.95	142.3	4.72	
1604	135	6.85	15.53	0.880	0.00	6.95	143.9	4.83	
1605	—	—	OK TO SAMPLE				—		

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: IW16 Date: 3/7/13

Sampling Personnel: Y. Spenny

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: min Pressure: 25 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: _____ ft
Static Depth to Water: 6.91 ft	Purge Start Time: 1050
Reference Point: mark	Sample Time: 1120 Sample ID: 24-IW16-030713
Casing Diameter: 4 in	QC Sample Type: — QC Sample Time: —
Total Depth: 30.34 ft	QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1100	145	6.92	16.28	9.150	0.11	7.19	-88.0	2.33	
1105	145	6.92	16.47	9.391	0.03	7.16	-99.7	1.78	
1110	145	6.92	16.51	9.419	0.02	7.15	-102.5	1.29	
1115	145	6.92	16.56	9.448	0.02	7.16	104.1	1.14	Sample

YBS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-IW21 Date: 3/8/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 25 PSI Recharge: 6.0 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.69 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 30.72 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 0957

Sample Time: 1025 Sample ID: 24-IW21-030813

QC Sample Type: DUP QC Sample Time: 1030

QC Sample ID: 24-IW21-030813-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1001	105	5.80	16.90	2.622	0.09	6.73	-140.2	9.16	
1006	105	5.89	16.98	2.617	0.06	6.80	-142.8	5.29	
1011	105	5.93	17.10	2.609	0.04	6.84	-139.9	4.47	
1016	105	5.99	17.17	2.606	0.04	6.85	-137.1	3.85	
1021	105	6.04	17.20	2.605	0.03	6.86	-136.8	3.11	ok to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-IW6 Date: 3/7/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non-dedicated mini bladder

Cycles per min: MN Pressure: 30 PSI Recharge: 4 sec Discharge: 1.6 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.16 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 29.20 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1235

Sample Time: 1330 Sample ID: 24-IW6-030713

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1245	180	6.21	16.07	3.149	0.00	6.93	152.3	6.34	
1250	180	6.21	16.20	3.305	0.00	7.04	143.8	5.14	
1255	180	6.22	16.30	3.163	0.00	7.09	133.5	3.80	
1300	180	6.22	16.32	2.820	0.00	7.11	129.2	3.60	
1305	180	6.23	16.33	2.401	0.00	7.12	125.4	5.53	
1310	180	6.23	16.34	1.745	0.00	7.11	125.4	7.15	
1315	180	6.23	16.33	1.782	0.00	7.09	127.3	9.20	
1320	180	6.23	16.32	1.733	0.00	7.08	130.5	9.62	
1325	180	6.23	16.33	1.734	0.00	7.07	133.6	9.53	ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-IW8
Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 4.0 sec Discharge: 0.7 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.25 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 27.65 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 0940

Sample Time: 1015 Sample ID: 24-IW8-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0945	100	6.27	16.11	3.410	0.12	6.58	-122.1	6.38	
0950	100	6.32	16.31	3.032	0.10	6.55	-116.4	3.86	
0955	100	6.32	16.43	2.833	0.09	6.54	-108.6	2.59	
1000	100	6.32	16.52	2.752	0.11	6.53	-105.1	1.89	
1005	100	6.31	16.55	2.722	0.08	6.52	-102.7	1.92	
1010	100	6.31	16.58	2.707	0.07	6.52	-103.9	1.68	Ok to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW04 Date: 3/7/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: 6 Pressure: 20 PSI Recharge: 8 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.75 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 13.65 ft

SAMPLE INFORMATION

Sample Depth: 12 ft

Purge Start Time: 1352

Sample Time: 1415 Sample ID: 24-MW04-030713

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1355	230	7.80	15.26	2.501	0.00	6.97	139.6	9.12	
1400	230	7.80	15.24	2.707	0.00	7.00	136.4	4.97	
1405	230	7.80	15.22	2.726	0.00	7.05	131.4	2.02	
1410	230	7.80	15.26	2.725	0.00	7.05	129.5	1.54	
1415	230	7.80	15.24	2.723	0.00	7.06	129.2	1.33	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW06A Date: 3/7/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 15.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.62 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 10.9 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 0943

Sample Time: 1008 Sample ID: 24-MW06A-030713

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0950	140	7.70	17.62	0.944	0.02	7.16	-117.6	25	
0953	140	7.70	17.61	0.945	0.01	7.14	-118.7	17	
0956	140	7.68	17.61	0.945	0.01	7.14	-119.9	12	
0959	140	7.67	17.65	0.946	0.01	7.13	-120.6	6.5	
1002	140	7.68	17.73	0.948	0.01	7.13	-121.3	6.9	
1005	140	7.70	17.75	0.950	0.01	7.13	-121.9	4.6	ok to sample PH

03/07/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW06B Date: 3/7/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 30 PSI Recharge: 15.0 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.18 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 24.3 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1024

Sample Time: 1048 Sample ID: 24-MW06B-030713

QC Sample Type: none QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1036	145	6.21	18.34	16.75	0.00	6.76	-112.5	3.7	
1039	145	6.22	18.29	17.17	0.00	6.77	-115.8	2.6	
1042	145	6.20	18.26	17.39	0.00	6.28	-117.6	2.0	
1045	145	6.21	18.27	17.51	0.00	6.78	-118.7	1.7	ok to sample pH

3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW07A Date: 3/7/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 7 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.66 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 11.20 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1030

Sample Time: 1100 Sample ID: 24-MW07A-030713

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1035	310	5.91	14.32	1.070	0.00	6.68	113.2	17.0	
1040	310	5.91	14.28	1.053	0.00	6.57	114.3	14.1	
1045	310	5.90	14.21	1.022	0.00	6.36	120.6	9.46	
1050	310	5.90	14.21	0.998	0.00	6.29	125.0	8.14	
1055	310	5.90	14.19	0.995	0.00	6.27	128.9	7.83	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW07B Date: 3/6/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: 6 Pressure: 20 PSI Recharge: 8.2 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.96 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 23.50 ft

SAMPLE INFORMATION

Sample Depth: _____ ft

Purge Start Time: 1717

Sample Time: 1745 Sample ID: 24-MW07B-030613

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1720	120	6.01	15.06	16.87	0.00	7.15	101.0	13.5	
1725	120	6.01	15.15	10.03	0.00	7.10	94.0	10.8	
1730	120	6.01	15.25	3.310	0.00	7.09	94.5	4.19	
1735	120	6.01	15.24	3.057	0.00	7.05	102.2	4.16	
1740	120	6.01	15.28	2.996	0.00	7.04	103.8	2.02	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW07C Date: 3/6/13

Sampling Personnel: _____

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: 6 Pressure: 18 PSI Recharge: 8.8 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.25 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 48.0 ft

SAMPLE INFORMATION

Sample Depth: 42 ft

Purge Start Time: 16:30

Sample Time: 1715 Sample ID: 24-MW07C-030613

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1645	100	6.78	15.34	35.87	0.19	7.21	153.0	50.2	
1650	100	6.81	15.40	36.64	0.00	7.25	141.8	18.9	
1655	100	6.83	15.42	37.02	0.00	7.26	135.5	9.15	
1700	100	6.86	15.46	37.44	0.00	7.27	124.9	3.52	
1705	100	6.87	15.50	37.79	0.00	7.27	117.9	2.77	
1710	100	6.88	15.47	38.00	0.00	7.27	116.0	2.18	ok to sample

TREVET

,977

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW10C Date: 3/7/13

Sampling Personnel: Y. Spencer

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: max Pressure: 35 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.085 ppm

Static Depth to Water: 6.90 ft

Reference Point: none

Casing Diameter: 1 in

Total Depth: 49.20 ft

SAMPLE INFORMATION

Sample Depth: 42 ft

Purge Start Time: 1245

Sample Time: 1325 Sample ID: 24-MW10C-030713

QC Sample Type: - QC Sample Time: -

QC Sample ID: -

COMMENTS: * Casing too small for probe

Final DTW → 8.79

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1250	150	*	16.95	33.64	0.51	7.45	-74.2	16.7	
1255	150	*	17.11	33.75	0.06	7.50	-95.0	28.9	
1300	150	*	17.23	27.66	0.06	7.52	-103.8	20.1	
1305	150	*	17.21	28.50	0.04	7.48	-108.6	11.4	
1310	150	*	17.37	30.76	0.03	7.46	-114.9	7.92	
1313	150	*	17.47	31.69	0.03	7.46	-118.3	8.45	
1316	150	*	17.49	32.23	0.02	7.47	-120.5	5.82	
1319	150	*	17.38	32.59	0.02	7.48	-120.4	5.18	

YBS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW2A-1 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: M20 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.60 ft

Reference Point: Sharpie

Casing Diameter: 4 in

Total Depth: 19.82 ft

SAMPLE INFORMATION

Sample Depth: 14 ft

Purge Start Time: 1400

Sample Time: 1430 Sample ID: 24-MW2A-1-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1405	150	5.64	15.55	1.878	0.13	6.90	-133.6	2.40	
1410	150	5.63	15.30	1.770	0.07	6.93	-138.4	1.51	
1415	150	5.63	15.24	1.758	0.05	6.94	-139.8	1.17	
1420	150	5.63	15.22	1.763	0.04	6.94	-139.3	2.32	
1425	150	5.64	15.23	1.779	0.04	6.95	-138.8	1.33	ok to sample (NN)

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW2B-1 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 25 PSI Recharge: 3.1 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.75 ft

Reference Point: Sharpie

Casing Diameter: 4 in

Total Depth: 29.09 ft

SAMPLE INFORMATION

Sample Depth: 24 ft

Purge Start Time: 1457

Sample Time: 1525 Sample ID: 24-MW2B-1-030713

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1502	125	5.90	15.17	4.625	0.05	7.05	-133.5	3.32	Adjust flow rate
1507	100	5.95	15.37	5.092	0.06	7.05	-144.7	3.21	Flow rate set
1512	100	5.97	15.42	5.099	0.06	7.06	-142.3	4.03	
1517	100	5.99	15.43	5.047	0.05	7.06	-144.8	4.23	
1522	100	6.02	15.44	4.996	0.05	7.06	-144.7	4.60	Ok to sample (NN)

TREVET

1134

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-MW03A-2 Date: 3/7/13

Sampling Personnel: J. Spency

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: man Pressure: 20 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.66 ft

Reference Point: Mark

Casing Diameter: 4 in

Total Depth: 19.18 ft

SAMPLE INFORMATION

Sample Depth: _____ ft

Purge Start Time: 1400

Sample Time: 1430 Sample ID: 24-MW03A-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1405	125	5.70	15.49	5.277	0.38	7.15	-111.8	6.36	
1410	125	5.72	15.53	4.605	0.05	6.95	-117.2	3.30	
1415	125	5.71	15.51	4.485	0.04	6.91	-120.0	2.23	
1420	125	5.73	15.49	4.445	0.03	6.91	-120.5	1.72	
1425	125	5.74	15.47	4.416	0.02	6.90	-119.9	0.97	Sample

TBS 3/7/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-MW5
Date: 3/7/13

Sampling Personnel: J. Spence

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: Max Pressure: 25 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 6.14 ft
Reference Point: Mark
Casing Diameter: 4 in
Total Depth: 23.35 ft

SAMPLE INFORMATION

Sample Depth: _____ ft
Purge Start Time: 1455
Sample Time: 1520 Sample ID: 24-MW5-030713
QC Sample Type: — QC Sample Time: —
QC Sample ID: —

COMMENTS:

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1500	160	6.20	15.43	2.255	1.25	6.84	-82.7	0.97	
1505	160	6.23	15.86	4.314	0.07	6.69	-96.7	4.48	
1510	160	6.23	15.98	4.321	0.03	6.68	-101.8	4.87	
1515	160	6.23	16.03	4.324	0.02	6.67	-103.5	6.40	Sample

JS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-03 Date: 3/7/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 20 PSI Recharge: 4.0 sec Discharge: 0.7 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.41 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 22.37 ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 0834

Sample Time: 0915 Sample ID: 24-TW-03-030713

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0842	110	–	16.18	4.291	0.09	6.63	-150.0	47.9	
0847	110	–	16.37	4.261	0.09	6.62	-151.1	32.5	
0852	110	–	16.42	4.258	0.08	6.62	-154.3	21.4	
0857	110	–	16.49	4.254	0.07	6.62	-154.2	13.8	
0902	110	–	16.55	4.253	0.07	6.62	-153.6	9.06	
0907	110	–	16.60	4.244	0.07	6.62	-151.7	7.02	
0912	110	–	16.62	4.244	0.07	6.62	-149.7	6.91	OK to sample (NN)
		5.40	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW11-031213 Date: 3/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non dedicated mini bladder

Cycles per min: Mn Pressure: 60 PSI Recharge: 3 sec Discharge: 1.3 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 9* ft
Static Depth to Water: 5.36 ft	Purge Start Time: 1545
Reference Point: TOC	Sample Time: 1645 Sample ID: 24-TW11-031213
Casing Diameter: 3/4 in	QC Sample Type: _____ QC Sample Time: _____
Total Depth: _____ ft	QC Sample ID: _____

COMMENTS: * Well has extremely high amounts of fine sand. Pump can not pish any sample from below 9 ft. At 9 ft, a low flow of 100ml/min is possible, but still very muddy

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1620 ~~1550~~	100	—	17.46	4.176	0.12	6.62	-148.9	1000+	turbidity out of range
1625	100	—	17.47	4.291	0.10	6.60	-156.4	1000+	
1630	100	—	17.47	4.299	0.01	6.60	-157.3	1000+	
1635	100	—	17.37	4.321	0.01	6.60	-157.8	1000+	
1640	100	—	17.32	4.333	0.01	6.61	-157.9	1000+	

Jason Mance

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW14 Date: 3/6/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.20 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 1359

Sample Time: 1440 Sample ID: 24-TW14-030613

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1405	105	unable to measure	16.18	2.200	0.01	6.85	98.7	98.1	
1410	105		16.20	2.177	0.01	6.86	103.2	68.9	
1415	105		16.31	2.092	0.00	6.90	107.1	57.0	
1420	105		16.08	2.086	0.00	6.93	110.6	41.2	
1425	105		16.15	2.107	0.00	6.94	113.2	24.9	
1430	105		16.05	2.168	0.00	6.95	114.9	25.1	
1435	105		15.97	2.159	0.00	6.95	116.5	25.6	ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-TW16
Date: 3/6/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 7.71 ft
Reference Point: TOC
Casing Diameter: 1 in
Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25 ft
Purge Start Time: 1509
Sample Time: 1615 Sample ID: 24-TW16-030613
QC Sample Type: _____ QC Sample Time: _____
QC Sample ID: _____

COMMENTS:

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1515	110	unable* to measure	15.87	7.388	0.01	6.57	140.1	356	
1520	110		15.86	6.712	0.00	6.60	136.2	340	
1525	110		15.91	6.381	0.00	6.62	135.9	245	
1530	110		15.90	5.956	0.00	6.64	136.7	182	
1535	110		15.91	5.728	0.00	6.64	137.6	154	
1540	110		15.91	5.462	0.00	6.65	138.3	137	
1545	110		15.88	5.284	0.00	6.67	139.7	109	
1550	110		15.87	5.145	0.00	6.67	140.7	142	
1555	110		15.77	5.001	0.00	6.67	141.6	157	
1600	110		15.73	4.920	0.00	6.67	142.8	108	
1605	110		15.65	4.886	0.00	6.67	143.5	99.2	
1610	110		15.60	4.893	0.00	6.66	144.3	98.5	

* GW depth probe can't fit down well with pump tubes.

TREVET

24-T

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: ~~T~~IW-23 Date: 3/7/13

Sampling Personnel: JM, GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non-dedicated mini bladder

Cycles per min: MN Pressure: ~~20~~25 PSI Recharge: 4 sec Discharge: 1.6 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.13 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 30.80 ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 0810

Sample Time: 0910 Sample ID: 24-TW23-030713

QC Sample Type: MS/MSD QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0825	180	~~15.75~~ 6.16	~~0.776~~ 15.78	0.796	0.01	7.23	145.5	506	
0830	180	6.17	15.97	0.780	0.01	7.21	147.6	131	
0835	180	6.17	16.09	0.776	0.01	7.24	165.2	194	
0840	180	6.17	16.12	0.778	0.01	7.22	161.9	131	
0845	180	6.17	16.15	0.776	0.00	7.21	162.7	118	
0850	180	6.17	16.17	0.776	0.00	7.22	163.2	83.7	
0855	180	6.17	16.19	0.780	0.00	7.22	164.4	35.5	
0900	180	6.17	16.11	0.780	0.00	7.22	165.5	36.7	
0905	180	6.17	16.13	0.785	0.00	7.22	166.4	38.1	ok to sample

Justin Mercer

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-26 Date: 3/11/13

Sampling Personnel: JA

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.92 ft

Reference Point: TOC/notch

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 21 ft

Purge Start Time: 1402

Sample Time: 1435 Sample ID: 24-TW-26-031113

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1409	100	–	16.64	2.887	0.06	6.64	174.5	337	
1412	100	–	16.38	3.041	0.04	6.67	168.4	424	
1415	100	–	16.24	3.119	0.03	6.68	165.0	375	
1418	100	–	16.23	3.165	0.02	6.69	162.6	289	
1421	100	–	16.21	3.212	0.02	6.69	160.2	226	
1424	100	–	16.20	3.225	0.02	6.70	159.5	213	
1427	100	–	16.20	3.228	0.02	6.70	158.7	208	Parameters Stable, 04 to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW28-031213 Date: 3/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non-dedicated mini bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 3 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.71 ft

Reference Point: TOC/notch

Casing Diameter: 1 in

Total Depth: 40.05 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1325

Sample Time: 1355 Sample ID: 24-TW28-031213

QC Sample Type: Dup QC Sample Time: 1400

QC Sample ID: 24-TW28-031213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1330	220	7.77	15.15	5.469	0.47	6.50	-100.9	26.0	
1335	220	7.80	15.05	5.777	0.15	6.54	-129.1	18.0	
1340	220	7.81	14.81	5.892	0.12	6.57	-138.9	16.0	
1345	220	7.80	14.71	5.996	0.10	6.57	-140.1	14.0	
1350	220	7.80	14.56	6.153	0.01	6.57	-143.2	15.0	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW30 Date: 3/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated bladder (mini)

Cycles per min: MN Pressure: 35 PSI Recharge: 4.0 sec Discharge: 1.8 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.53 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: 35.65 ft

SAMPLE INFORMATION

Sample Depth: 24 ft

Purge Start Time: 1406

Sample Time: 1450 Sample ID: 24-TW30-031113

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1420	120	7.53	16.88	5.982	0.82	6.69	-113.8	160	* adjusted flow rate
1425	200	7.53	17.01	5.514	0.68	6.67	-107.4	75.0	up to 200
1430	200	7.53	17.04	5.377	0.58	6.69	-106.0	30.0	
1435	200	7.54	17.09	5.152	0.58	6.69	-105.7	19.0	
1440	200	7.54	17.09	5.053	0.43	6.70	-107.4	18.0	
1445	200	7.54	17.08	5.021	0.38	6.70	-107.5	20.2	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: TW-32 Date: 3/7/13

Sampling Personnel: J. Sperry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: Man Pressure: 25 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.022 ppm

Static Depth to Water: 8.73 ft

Reference Point: hom

Casing Diameter: 1 in

Total Depth: 36.12 ft

SAMPLE INFORMATION

Sample Depth: ~25 ft

Purge Start Time: 940

Sample Time: 1020 Sample ID: 24-TW-32-030713

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * Casing too narrow for probe

Final WL → 8.75

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
945	150	*	16.35	5.956	0.40	7.23	-108.7	15.9	
950	150	*	16.82	6.330	0.04	7.20	-117.6	4.13	
955	150	*	16.94	6.330	0.03	7.20	-127.5	8.08	
1000	150	*	17.08	6.275	0.02	7.20	-129.4	13.3	
1005	150	*	17.12	6.157	0.02	7.22	-135.2	11.0	
1010	150	*	17.20	6.059	0.02	7.24	-139.0	7.21	
1013	150	*	17.25	5.979	0.01	7.25	-140.2	5.22	
1016	150	*	17.26	5.914	0.01	7.26	-141.6	5.36	Sample

TMS 3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-34 Date: 3/8/13

Sampling Personnel: J. Spenry

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: MAN Pressure: 25 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.76 ft

Reference Point: none

Casing Diameter: 1" in

Total Depth: 32.58 ft

SAMPLE INFORMATION

Sample Depth: _____ ft

Purge Start Time: 930

Sample Time: 1005 Sample ID: 24-TW-34-030813

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * casing too narrow for probe

Final DTW → 6.77

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
935	155	*	16.77	1.508	0.14	7.25	-37.6	19.2	
940	155	*	16.74	1.476	0.06	7.21	-68.7	14.4	
945	155	*	16.78	1.665	0.03	7.24	-101.2	8.46	
950	155	*	16.84	1.849	0.02	7.26	-115.6	5.26	
955	155	*	16.84	1.912	0.01	7.25	-122.7	5.01	
958	155	*	16.85	1.943	0.01	7.25	-125.6	5.02	
1001	155	*	16.89	1.968	0.01	7.25	-127.5	5.20	Sample

JS 3/8/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-36 Date: 3/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 23 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.95 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 32.50 ft

SAMPLE INFORMATION

Sample Depth: 21 ft

Purge Start Time: 1554

Sample Time: 1620 Sample ID: 24-TW-36-031113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1600	100	–	16.76	6.092	0.01	6.74	137.9	11.6	
1603	100	–	16.75	6.236	0.01	6.76	138.2	7.53	
1606	100	–	16.76	6.378	0.01	6.75	139.0	5.72	
1609	100	–	16.76	6.510	0.01	6.75	140.0	5.19	
1612	100	–	16.77	6.548	0.01	6.75	140.5	4.75	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-37 Date: 3/8/13

Sampling Personnel: S. Spery

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" OED

Cycles per min: MAN Pressure: ~~18~~ 25 PSI Recharge: 5 sec Discharge: 2 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: _____ ft
Static Depth to Water: 6.60 ft	Purge Start Time: 837
Reference Point: none	Sample Time: 915 Sample ID: 24-TW-37-030813
Casing Diameter: 1 in	QC Sample Type: — QC Sample Time: —
Total Depth: ~~6.60~~ 33.40 ft	QC Sample ID: —

COMMENTS: * Casing too narrow for probe
Sample slightly effervescent Final DTW 6.60

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
845	160	*	16.00	2.802	0.08	7.05	22.1	23.8	
850	160	*	16.45	2.908	0.05	6.98	-69.7	6.26	
855	160	*	16.71	3.120	0.04	6.97	-88.6	3.51	
900	160	*	16.78	3.279	0.02	6.98	-99.9	4.40	
905	160	*	16.77	3.330	0.01	6.98	-105.2	3.20	
908	160	*	16.79	3.349	0.01	6.98	-106.9	2.23	Sample

933 3/8/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-38 Date: 3/7/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 3.0 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.37 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 32.3 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1405

Sample Time: 1422 Sample ID: 24-TW-38-030713

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1409	150	7.37	16.20	4.354	0.02	6.36	-73.6	16	
1412	150	7.38	16.32	4.514	0.01	6.36	-76.8	9.2	
1415	150	7.37	16.31	4.584	0.01	6.36	-77.4	9.1	
1418	150	7.38	16.38	4.650	0.01	6.37	-79.2	9.7	ok to sample pH

3/7/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-4D Date: 3/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 19 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.98 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 1639

Sample Time: 1715 Sample ID: 24-TW-4D-031113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1645	100	—	16.25	3.351	0.01	6.92	133.9	46.2	
1648	100	—	16.16	2.685	0.01	6.94	134.3	46.8	
1651	100	—	16.13	2.277	0.01	6.99	133.8	39.1	
1654	100	—	16.12	1.941	0.01	7.01	136.3	35.2	
1657	100	—	16.14	1.635	0.01	7.01	139.6	24.0	
1700	100	—	16.14	1.553	0.01	7.02	141.0	12.7	
1703	100	—	15.96	1.502	0.01	7.02	142.9	9.23	
1706	100	—	16.04	1.354	0.01	7.02	144.3	8.37	
1709	100	—	16.11	1.347	0.01	7.02	145.1	8.12	
1712	100	—	16.07	1.329	0.01	7.02	145.7	7.53	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-41 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.03 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 19 ft

Purge Start Time: 1037

Sample Time: 1100 Sample ID: 24-TW-41-031213

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1045	100	–	15.93	5.302	0.01	6.79	200.1	7.20	
1048	100	–	15.99	4.715	0.01	6.81	198.7	7.88	
1051	100	–	16.08	4.440	0.01	6.83	197.7	6.85	
1054	100	–	16.13	4.424	0.01	6.82	197.5	6.43	
1057	100	–	16.19	4.411	0.01	6.80	197.3	6.53	Parameters stable,
									ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-44 Date: 3/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.64 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 21 ft

Purge Start Time: 1500

Sample Time: 1525 Sample ID: 24-TW-44-031113

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1510	100	–	16.80	5.232	0.01	6.62	149.9	104	
1513	100	–	16.80	5.515	0.01	6.63	148.7	18.5	
1516	100	–	16.80	5.669	0.01	6.63	146.9	8.03	
1519	100	–	16.82	5.713	0.01	6.63	146.3	6.25	
1522	100	–	16.83	5.743	0.01	6.62	146.2	3.81	Parameters stable, ok to sample

TREVET

0.041 gal/ft = 1.88 gal x 3 = 5.64 21,349 mL .23

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-TW46
Date: 3/6/13

Sampling Personnel: J. Spear

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: manual Pressure: 27 PSI Recharge: 7 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 9.09 ft

Reference Point: notch

Casing Diameter: 1 in

Total Depth: 41.20 ft

SAMPLE INFORMATION

Sample Depth: ~25' ft

Purge Start Time: 1620

Sample Time: 1740 Sample ID: 24-TW46-030613

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * 1" casing, too small for probe

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
~~1625~~	~~120~~	~~*~~	~~15.13~~	~~0.005~~	~~1.31~~	~~7.58~~	~~-105.0~~	~~21.4~~	~~omit reading~~ JBS 3/6/13
1635	120	*	16.13	0.563	0.06	7.24	-106.7	19.8	
1640	120	*	16.19	0.599	0.04	7.22	-110.2	43.3	
1645	120	*	16.34	0.808	0.03	7.24	-113.1	55.4	
1650	120	*	16.35	1.660	0.01	7.20	-124.9	46.9	
1655	120	*	16.33	2.684	0.01	7.20	-138.7	40.2	
1700	120	*	16.29	3.842	0.01	7.21	-150.1	26.4	
1705	120	*	16.37	5.375	0.01	7.24	-156.6	17.9	
1710	120	*	16.37	5.822	0.01	7.24	-156.9	13.5	
1715	120	*	16.38	6.134	0.01	7.23	-152.8	12.7	
1720	120	*	16.38	6.461	0.01	7.24	-153.7	9.85	
1725	120	*	16.38	6.826	0.01	7.25	-152.4	6.90	
1728	120	*	16.35	6.970	0.01	7.25	-149.7	5.85	
1731	120	*	16.32	7.091	0.01	7.25	-149.0	5.62	
1734	120	*	16.29	7.204	0.01	7.25	-148.9	5.69	

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083-003

Well ID: 24-TW-47
Date: 3/8/13

Sampling Personnel: NN

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4"

Cycles per min: MN Pressure: 35 PSI Recharge: 6.0 sec Discharge: 0.9 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.32 ft

Reference Point: Sharpie

Casing Diameter: 1 in

Total Depth: 28-29 ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 0842

Sample Time: 0940 Sample ID: 24-TW-47-030813

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Pump obstructing DTW measurements during purge.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0850	100	—	17.68	2.462	0.07	6.68	-118.7	59.8	
0855	100	—	17.71	2.405	0.06	6.67	-125.6	59.0	
0900	100	—	17.72	2.412	0.05	6.67	-128.3	49.0	
0905	100	—	17.68	2.437	0.04	6.67	-131.9	31.6	
0910	100	—	17.62	2.471	0.04	6.67	-134.3	22.3	
0915	100	—	17.57	2.517	0.04	6.67	-137.0	16.1	
0920	100	—	17.58	2.544	0.03	6.67	-138.1	12.5	
0925	100	—	17.54	2.577	0.03	6.66	-138.7	9.25	
0930	100	—	17.48	2.599	0.04	6.66	-138.8	7.30	
0935	100	—	17.42	2.602	0.03	6.66	-139.2	5.81	Ok to sample (NN)
		5.35	Final	DTW					

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW48 Date: 3/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated mini bladder

Cycles per min: MA Pressure: 35 PSI Recharge: 3 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.75 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 16.5 ft

Purge Start Time: 1451

Sample Time: 1520 Sample ID: 24-TW48-031213

QC Sample Type: — QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1455	250	5.85	17.67	4.081	0.38	6.60	-162.8	33.0	
1500	250	5.85	17.59	3.455	0.20	6.60	-163.7	27.0	
1505	250	5.85	17.58	3.444	0.17	6.59	-162.5	17.0	
1510	250	5.85	17.58	3.419	0.17	6.59	-160.2	17.0	
1515	250	5.86	17.58	3.434	0.17	6.59	-160.0	15.8	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW49 Date: 3/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dedicated bladder

Cycles per min: MA Pressure: 38 PSI Recharge: 3 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.95 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 1220

Sample Time: 1300 Sample ID: 24-TW49-031213

QC Sample Type: _____ QC Sample Time: _____

QC Sample ID: _____

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1225	230	8.95	16.36	3.130	0.75	6.90	-66.6	95	
1230	230	8.96	16.77	1.786	0.45	6.92	-33.9	120	
1235	230	8.96	16.86	1.697	0.42	6.91	-47.6	23.0	
1240	230	8.96	16.76	1.864	0.37	6.92	-56.9	160	
1245	230	8.96	16.82	1.934	0.36	6.90	-64.0	9.70	
1250	230	8.94	16.83	1.985	0.39	6.91	-69.4	9.90	
1255	230	8.93	16.86	1.992	0.23	6.90	-70.6	8.90	ok to sample

Justin Mora

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW50 Date: 3/8/13

Sampling Personnel: GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" PORTABLE BLADDER

Cycles per min: MN Pressure: 21 PSI Recharge: 4.0 sec Discharge: 1.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.62 ft

Reference Point: TOC (PVC)

Casing Diameter: 1 in

Total Depth: 23.15 ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 0825

Sample Time: 0915 Sample ID: 24-TW50

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0835	130	—	17.30	5.201	0.02	6.90	103.3	40.6	
0840	130	—	17.40	5.126	0.02	6.89	84.6	37.2	
0845	130	—	17.53	5.071	0.03	6.89	67.7	30.8	
0850	130	—	17.62	5.009	0.02	6.88	57.7	29.7	
0855	130	—	17.69	4.930	0.01	6.88	46.1	36.4	
0900	130	—	17.70	4.865	0.01	6.88	45.0	23.4	
0905	130	—	17.71	4.776	0.01	6.88	39.1	23.1	
0910	130	—	17.73	4.754	0.01	6.87	36.4	23.0	
0915	—	—	—	OK TO SAMPLE			—	—	—

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW51 Date: 3/8/13

Sampling Personnel: GT

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" PORTABLE BLADDER

Cycles per min: MN Pressure: 21 PSI Recharge: 4.0 sec Discharge: 1.4 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.42 ft

Reference Point: TOC (PVC)

Casing Diameter: 1" in

Total Depth: 16.50 ft

SAMPLE INFORMATION

Sample Depth: 16 ft

Purge Start Time: 1000

Sample Time: 1035 Sample ID: 24-TW51-030813

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1003	130	—	—	—	SET	FLOW	—	—	—
1005	130	—	16.00	3.682	0.00	6.89	33.5	111	
1010	130	—	15.62	2.916	0.00	6.96	46.7	79.2	
1015	130	—	15.58	2.845	0.00	6.97	50.7	63.8	
1020	130	—	15.55	2.795	0.00	6.97	55.8	52.8	
1025	130	—	15.54	2.757	0.00	6.97	60.9	52.4	
1030	130	—	15.54	2.747	0.00	6.97	62.8	49.5	
—	—	—	OK	TO	SAMPLE	—	—	—	—

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TWS2 Date: 3/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: non dediated mini bladder

Cycles per min: MA Pressure: ~~30~~ 25 PSI Recharge: 1.5 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: ~~6.51~~ 6.64 ft

Reference Point: TOC

Casing Diameter: 2 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 1746

Sample Time: 1815 Sample ID: 24-TWS2-031113

QC Sample Type: Dup QC Sample Time: 1820

QC Sample ID: 24-TWS2-031113-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1750	300	7.81	17.05	2.335	1.84	6.86	-135.1	19.0	*adjusted flow down
1755	250	7.83	17.52	2.036	0.58	6.85	-148.6	18.0	to avoid drawdown
1800	250	7.81	17.61	2.000	0.30	6.84	-156.6	22.0	
1805	250	7.81	17.63	2.022	0.23	6.83	-160.4	21.0	
1810	250	7.81	17.64	2.043	0.20	6.82	-162.2	21.0	ok to sample

Joshua Meier

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083-003	Well ID: 24-TW-53 Date: 3/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 feet

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.51 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 1510

Sample Time: 1535 Sample ID: 24-TW-53-031213

QC Sample Type: DUP QC Sample Time: 1540

QC Sample ID: 24-TW-53-031213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (feet)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1515	100	–	17.80	4.825	0.02	6.84	154.4	48.9	
1518	100	–	17.86	3.618	0.02	6.83	148.6	86.2	
1521	100	–	17.85	3.000	0.01	6.82	150.9	106	
1524	100	–	17.84	2.511	0.01	6.79	150.7	114	
1527	100	–	17.84	2.021	0.01	6.76	154.3	116	
1530	100	–	17.83	1.984	0.02	6.74	155.5	110	
1533	100	–	17.82	1.968	0.02	6.72	156.2	117	Parameters stable, ok to sample

TREVET

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW25
DATE: 3/13/13 ~~December 2011~~

Sampling Personnel: MLF/JH/JS

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume — mL
Cycles per minute MA Pressure 40 PSI Discharge 1 sec Recharge 2 sec

PID = 0.2 ppm

Groundwater Well Information:
DEPTH TO WATER 6.30 feet from TOC (reference point
Purge Start Time 1148
Pump Inlet 11 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: _____ feet BGS
BASE OF WELL: 15.45 feet BGS

Sample ID: IR06-031313-25
Sample Time 1210

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1153	280	6.33	15.98	0.737	0.04	7.67	-122.0	16.0	
1156	280	6.34	15.44	0.693	0.02	7.72	-136.8	15.0	
1159	280	6.34	15.21	0.678	0.01	7.73	-145.9	2.6	
1202	280	6.34	15.14	0.671	0.01	7.73	-151.2	2.8	
1205	280	6.34	15.13	0.665	0.01	7.72	-154.1	1.3	
1208	280	6.34	15.12	0.664	0.01	7.72	-155.1	2.1	

Justin Mercer

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW26
DATE: 3/13/13 ~~December 2011~~

Sampling Personnel: MLF/JH/JS

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume – mL
Cycles per minute MN Pressure 45 PSI Discharge 1 sec Recharge 2 sec

PID = 0.0 ppm

Groundwater Well Information: DEPTH TO WATER 6.12 feet from TOC (reference point
Purge Start Time 1035 Pump Inlet 10.5 feet BTOC
CASING DIAMETER: 4 inches SCREEN INTERVAL: _____ feet BGS BASE OF WELL: 14.7 feet BGS

Sample ID: IR06-031313-26 Sample Time 1105 *Pump set @ center of water column

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1050	275	6.12	16.31	0.847	0.10	7.45	109.1	16.0	
1053	275	6.12	16.38	0.836	0.03	7.46	-29.9	16.0	
1056	275	6.12	16.42	0.835	0.02	7.46	-86.3	16.0	
1059	275	6.12	16.44	0.836	0.01	7.46	-88.4	15.0	
1102	275	6.12	16.45	0.836	0.01	7.46	-93.1	16.0	
1105	275	6.12	16.51	0.838	0.01	7.47	-97.2	16.0	

Justin Merce

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW25
DATE: 4/16/13

Sampling Personnel: JH

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume – mL
Cycles per minute manual Pressure 40 PSI Discharge 1 sec Recharge 2 sec

Groundwater Well Information:
DEPTH TO WATER 4.92 feet from TOC/Mark (reference point
Purge Start Time 1245
Pump Inlet 9.5 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: 4.5-14.5 feet BGS
BASE OF WELL: 15.05 feet BGS
Sample ID: IR6-041613-25
Sample Time 1310

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1250	300	4.95	16.22	0.655	0.09	7.13	57.7	15.5	
1253	300	4.96	16.15	0.651	0.06	7.18	53.2	15.9	
1256	300	4.96	16.11	0.648	0.07	7.24	41.9	15.3	
1259	300	4.97	16.09	0.646	0.05	7.25	40.8	15.0	
1302	300	4.97	16.07	0.643	0.04	7.26	38.6	15.5	Parameters stable, ok to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW26
DATE: 04/16/13

Sampling Personnel: JH

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume — mL
Cycles per minute manual Pressure 45 PSI Discharge 1 sec Recharge 2 sec

Groundwater Well Information:
DEPTH TO WATER 6.13 feet from TOC / Survey Mark reference point
Purge Start Time 1325
Pump Inlet 9.5 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: 4.5-14.5 feet BGS
BASE OF WELL: 14.7 feet BGS
Sample ID: IRB-041613-26
Sample Time 1350

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1330	200	6.13	17.34	0.946	0.15	7.32	198.1	10.7	
1333	200	6.13	17.07	0.940	0.11	7.32	176.1	11.1	
1336	200	6.13	16.94	0.939	0.14	7.34	162.0	8.76	
1339	200	6.13	16.91	0.937	0.12	7.32	155.9	7.29	
1342	200	6.13	16.89	0.934	0.08	7.32	153.5	7.04	Parameters stable, ok to sample.

TREASURE ISLAND
IR SITE 12 and 6
GROUNDWATER ELEVATIONS
December 2009

Field Personnel: JH/JM

Date : 6/24/13

Well I.D.	Casing Diameter (inches)	Depth of Well (feet BTOC)	Depth to GW (9/29/08) (feet BTOC)	Time	Depth to GW (Feet BTOC)
12-MW20			4.00	0641	4.21
12-MW05			4.02	0640	7.54
12-MW23			2.96	0636	3.03
12-MW24			3.53	0627	3.54
12-MW22			3.17	0632	3.37
12-MW33			7.81	0636	7.55
12-MW34			7.99	0638	7.77
12-MW21			3.81	0649	3.91
12-MW07			4.09	0646	4.04
12-MW32			4.58	0720	4.21
12-MW31			2.98	0714	2.84
12-MW08					
12-MW09					
12-MW28					
12-MW29				0832	6.23
12-MW30				0827	~~3.88~~ 3.82
06-MW25	4			0605	4.81
06-MW26	4			0600	5.81

Field Personnel:
Date :

Well I.D.	Casing Diameter (inches)	Depth of Well (feet BTOC)	Depth to GW (9/29/08) (feet BTOC)	Time	Depth to GW (Feet BTOC)
12-MW01	2	4.07		6:21	
12-MW13	2	3.02	3.1	6:25	
12-MW18	2	4.68	4.17	6:29	
12-MW17	2	2.02	2.89	6:40	
12-MW19	2	3.01	2.77	6:34	
12-MW11	2	3.08	3.02	6:47	
12-MW04	4	3.16	2.95	7:32	
12-MW16	2	3.53	3.57	7:18	
12-MW14	2	5.53	5.56	7:07	
12-MW15	2	4.90	3.96	7:01	
12-MW03	4	3.03	3.21	6:53	

WELL SAMPLING LOG

(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW 25
DATE: 6/24/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 4 Pressure 10 PSI Discharge 3 sec Recharge 12 sec

Groundwater Well Information:
DEPTH TO WATER 4.85 feet from TOC (reference point
Purge Start Time 1500
Pump Inlet 7.5 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: 4.5-14.5 feet BGS
BASE OF WELL: 15.05 feet BGS
Sample ID: JR06-062413-25
Sample Time 1520

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1505	300	4.87	19.33	0.567	0.76	7.29	-160.2	3.14	
1508	300	4.87	19.26	0.565	0.55	7.29	-172.1	3.27	
1511	300	4.87	19.14	0.564	0.43	7.30	-184.0	3.02	
1514	300	4.88	19.08	0.563	0.31	7.32	-184.1	3.25	
1517	300	4.88	19.06	0.562	0.22	7.34	-183.7	3.10	Parameters stable, ok to sample.

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 06-MW26
DATE: 6/24/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume — mL
Cycles per minute ~~[illegible]~~ 4 Pressure 40 PSI Discharge 1.5 sec Recharge 13.5 sec

Groundwater Well Information:
DEPTH TO WATER 5.90 feet from TOC (reference point
Purge Start Time 1503
Pump Inlet 9.5 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: 4.5-14.5 feet BGS
BASE OF WELL: 14.7 feet BGS
Sample ID: TR06-062413-26
Sample Time 1545

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
1510	500	5.90	17.76	0.745	10.80	7.07	-29.9	6	
1515	500	5.90	17.76	0.745	1.38	7.23	-41.0	2	
1520	500	5.90	17.75	0.745	0.81	7.24	-50.3	1	
1525	500	5.90	17.76	0.745	0.53	7.25	-55.2	1	Paused purging
1530	500	5.90	17.73	0.745	0.71	7.28	-44.9	1	Resumed purging
1540	500	5.90	17.69	0.742	0.54	7.30	-45.1	1	Stable. Ok to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW05
DATE: 06/25/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 4 Pressure 20 PSI Discharge 2 sec Recharge 13 sec

Field duplicate collected

Groundwater Well Information: DEPTH TO WATER 7.51 feet from Sampler mark (reference point
Purge Start Time 7:15 Pump Inlet 12.5 feet BTOC
CASING DIAMETER: 2 inches SCREEN INTERVAL: 3.5-13.5 feet BGS BASE OF WELL: 14.5 feet BGS

Sample ID: JR12-062513-05/05T Sample Time 7:50 JR12-062513-05DUP / 05TDUP

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
7:25	120	7.61	17.72	0.613	0.41	7.96	-153.4	143	
7:30	120	7.62	17.75	0.613	0.34	7.85	-157.1	10	
7:35	120	7.61	17.79	0.615	0.17	7.89	-163.0	8.43	
7:40	120	7.61	17.79	0.616	0.18	7.87	-162.8	7.59	
7:45	120	7.61	17.80	0.616	0.23	7.88	-161.2	7.13	ready to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW20
DATE: 06-24-2013

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 6 Pressure 18 PSI Discharge 1 sec Recharge 9 sec

Groundwater Well Information:
DEPTH TO WATER 4.11 feet from Sampler mark (reference point
Purge Start Time 15:00
Pump Inlet 9 feet BTOC
CASING DIAMETER: 2 inches
SCREEN INTERVAL: 2-12 feet BGS
BASE OF WELL: 12.5 feet BGS
Sample ID: JR12-062413-20 / JR12-062413-20T
Sample Time 15:40
Collected MS/MSD

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
15:15	140	4.12	16.35	0.578	0.25	7.27	-82.9	11.47	
15:20	140	4.12	16.32	0.578	0.16	7.41	-103.0	9.11	
15:25	140	4.12	16.32	0.580	0.11	7.41	-109.9	5.33	
15:30	140	4.12	16.44	0.581	0.09	7.37	-114.0	3.02	
15:35	140	4.12	16.42	0.580	0.08	7.31	-114.2	1.48	ready to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW22
DATE: 06/25/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 4 Pressure 20 PSI Discharge 1 sec Recharge 14 sec

Groundwater Well Information:
DEPTH TO WATER 3.72 feet from TOC (reference point
Purge Start Time 0712
Pump Inlet 10.8 feet BTOC
CASING DIAMETER: 2 inches
SCREEN INTERVAL: 2-12 feet BGS
BASE OF WELL: 12.5 feet BGS
Sample ID: IR12-062513-22/22T
Sample Time 0745

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
0717	160	3.72	17.44	0.884	1.80	6.23	-36.4	41	
0722	160	3.72	17.31	1.004	0.60	6.31	-52.9	34	
0727	160	3.72	17.26	1.044	0.44	6.49	-69.9	22	
0732	160	3.72	17.27	1.053	0.39	6.67	-78.9	9	
0737	160	3.72	17.30	1.054	0.36	6.73	-81.3	8	
0742	160	3.72	17.28	1.052	0.34	6.75	-86.4	9	ok to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW23
DATE: 6/25/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 4 Pressure 15 PSI Discharge 3 sec Recharge 12 sec

Groundwater Well Information:
DEPTH TO WATER 3.02 feet from TOC (reference point
Purge Start Time 0725
Pump Inlet 8 feet BTOC
CASING DIAMETER: 4 inches
SCREEN INTERVAL: 2-12 feet BGS
BASE OF WELL: 12.5 feet BGS
Sample ID: IR12-062513-23 + 23T Sample Time 0750

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
0735	320	3.23	16.45	0.853	0.35	7.05	-129.7	2.87	
0738	320	3.23	16.42	0.850	0.27	7.06	-131.2	2.52	
0741	320	3.24	16.42	0.849	0.21	7.06	-131.3	2.41	
0744	320	3.24	16.42	0.848	0.17	7.04	-131.7	2.07	
0747	320	3.25	16.41	0.845	0.16	7.05	-132.1	2.04	Parameters stable, ok to sample.

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW28
DATE: 06/26/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 6 Pressure 18 PSI Discharge 1.6 sec Recharge 8.4 sec

Unable to take GW measurements

Groundwater Well Information: DEPTH TO WATER NA feet from _____ (reference point
Purge Start Time 7:55 Pump Inlet _____ feet BTOC
CASING DIAMETER: _____ inches SCREEN INTERVAL: _____ feet BGS BASE OF WELL: _____ feet BGS

Sample ID: IR12-062613-28/JT Sample Time 8:40

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
08:15	100	NA	20.53	19.98	0.77	7.36	195.5	70	
8:20	100	NA	20.23	19.77	0.35	7.34	188.7	12	
8:25	100	NA	21.60	20.38	0.28	7.43	184.2	6	
8:30	100	NA	21.90	20.49	0.24	7.47	182.2	3	
8:35	100	NA	22.16	20.55	0.23	7.48	182.5	4	ready to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW29
DATE: 06/26/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute 6 Pressure 18 PSI Discharge 1.0 sec Recharge 9 sec

Groundwater Well Information:
DEPTH TO WATER 6.02 feet from TOC (reference point
Purge Start Time 0801
Pump Inlet _____ feet BTOC
CASING DIAMETER: 2 inches
SCREEN INTERVAL: _____ feet BGS
BASE OF WELL: _____ feet BGS
Sample ID 12-062613-29/29T
Sample Time 0845

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
0810	110	6.04	20.31	3.150	0.04	7.43	-129.4	15	
0815	110	6.04	20.23	3.187	0.02	7.24	-121.6	18	
0820	110	6.04	20.59	3.274	0.02	7.26	-128.5	9	
0825	110	6.04	21.31	3.360	0.01	7.56	-143.6	7	
0830	110	6.04	22.32	3.411	0.01	7.74	-155.9	6	
0835	110	6.05	22.82	3.414	0.01	7.73	-156.8	6	
0840	110	6.05	23.23	3.411	0.01	7.74	-158.2	5	ok to sample

WELL SAMPLING LOG
(Low-Flow Purging)

PROJECT: NAVSTA-TI
JOB NO.: A026-003

WELL NO.: 12-MW30
DATE: 6/26/13

Sampling Personnel: JH/JS/JM

Stabilization Criteria: 3 consecutive readings: ± 0.1 pH, ± 3% conductivity, ± 10% turbidity (if > 10 NTUs), ± 0.3 mg/L DO; ± 10 mV ORP
flow rate of 100-500 ml/min; Water level drawdown < 0.3 feet

Remarks: System Volume _____ mL
Cycles per minute manual Pressure 25 PSI Discharge 1 sec Recharge 3 sec

Portable 3/4" Bladder pump used.

Groundwater Well Information: DEPTH TO WATER 3.35 feet from TOC (reference point
Purge Start Time 0745 Pump Inlet _____ feet BTOC
CASING DIAMETER: 2 inches SCREEN INTERVAL: _____ feet BGS BASE OF WELL: _____ feet BGS

Sample ID: IR12-062613-30 + 30T Sample Time 0830

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Level (feet)	Temp (°C)	Electrical Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments
0800	100	3.83	18.70	0.560	0.77	7.86	198.7	7.68	
0805	100	3.96	18.75	0.560	0.49	7.54	169.5	7.32	
0810	100	4.12	18.35	0.555	0.48	7.23	144.1	7.06	
0815	100	4.10	17.92	0.550	0.43	7.26	126.5	6.52	
0820	100	4.09	18.04	0.549	0.26	7.20	120.9	6.35	
0825	100	4.07	18.43	0.554	0.28	7.17	122.6	6.21	Parameters stable, ok to sample

Date: 9/16/13

Project Location: NAVSTA TI Site Number: 6

Field Personnel: JM Time of Low Tide: 3:57AM Tide Height (Ft): -0.1 ft

Well ID	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point	Time	Observations
06-MW25	4.67		TOC	838	Must be gauged
06-MW26	5.81		TOC	835	within 4 hours of
12-MW04	2.93		TOC	747	low tide. (4-8 AM)

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 06-MW25 Date: 9/16/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated bladder

Cycles per min: 4 Pressure: 12 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 4.65 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 15.05 ft

SAMPLE INFORMATION

Sample Depth: 7.5 ft

Purge Start Time: 1002

Sample Time: 1035 Sample ID: 06-MW25-091613

QC Sample Type: Dup QC Sample Time: 1040

QC Sample ID: 06-MW25-091613D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1010	300	4.67	20.55	0.633	0.84	7.46	-99.7	0.40	1 system vol purged
1015	300	4.67	21.02	0.545	0.16	7.63	-132.2	0.32	
1020	300	4.67	21.04	0.542	0.11	7.64	-135.9	0.29	
1025	300	4.68	21.01	0.543	0.12	7.65	-134.9	0.25	
1030	300	4.68	20.92	0.544	0.09	7.66	-134.4	0.21	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 06-MW26 Date: 9/16/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated bladder

Cycles per min: 4 Pressure: 40 PSI Recharge: ~~6.5~~ 13.5 sec Discharge: ~~13.5~~ 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.80 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 14.7 ft

SAMPLE INFORMATION

Sample Depth: 7.5 ft

Purge Start Time: 906

Sample Time: 0940 Sample ID: 06-MW26-091613

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
915	350	5.75	19.14	0.762	0.18	7.61	-35.4	0.97	1 system vol purged
920	350	5.75	19.12	0.761	0.13	7.60	-82.5	0.90	
925	350	5.75	19.10	0.757	0.12	7.61	-94.0	0.82	
930	350	5.75	19.10	0.757	0.10	7.61	-95.6	0.61	
935	350	5.75	19.09	0.755	0.09	7.61	-98.4	0.52	stable, ok to sample

TREVET

Date: 12/9/13

Project Location: NAVSTA TI **Site Number:** 6

Field Personnel: JM, JH **Time of Low Tide:** 1144 **Tide Height (Ft):** 1.8 ft

Well ID	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point	Time	Observations
06-MW25	4.87		TOC/mark	1201	
06-MW26	5.98		TOC/mark	1205	
12-MW04	3.11		TOC/mark	1214	

Date: 12/9/13

Project Location: NAVSTA TI **Site Number:** 21

Field Personnel: JM/JH **Time of Low Tide:** 1144 **Tide Height (Ft):** 1.8 Ft

Well ID	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point	Time	Observations
21-MW02A	6.71		TOC/mark	1222	
21-MW09A	7.00		TOC/Mark	1224	
21-IP07	7.02		TOC/Mark	1226	

Date: 12/10/13

Project Location: NAVSTA TI **Site Number:** 24

Field Personnel: JM, DH **Time of Low Tide:** **Tide Height (Ft):**

Well ID	Depth to Water (feet) from Reference Point	Total Depth (feet) from Reference Point	Reference Point	Time	Observations
24-BB89	6.74		TOC	1412	Use peristaltic pump
EW-28	6.87		TOC	1418	
24-IW21	6.85		TOC	1423	
24-EW4	6.89		TOC	1426	
TW11	6.48		TOC	1428	Peristaltic
EW29	6.55		TOC	1432	
IW5	6.51		TOC	1440	
TW47	6.47		TOC	1443	
BB80	7.27		TOC	1446	Peristaltic
TW48	6.76		TOC	1448	
EW6	6.88		TOC	1452	
BB76					Broken
IW8	7.30		TOC	1512	
TW14	7.13		TOC	1518	peristaltic
EW30	6.67		TOC	1520	
TW41	7.80		TOC	1522	
TW37	7.49		TOC	1523	
TW25	7.21		TOC	1525	
BB63	7.89		TOC	1531	Peristaltic
TW26	7.83		TOC	1532	
EW31	6.77		TOC	1533	
BB38	8.66		TOC	1544	Peristaltic
TW-49	9.10		TOC	1554	roots obstructing well
EW34	8.10		TOC	1556	
EW33	7.91		TOC	1606	
TW-8	8.07		TOC	1602	
EW-32	7.88			1607	
TW-27	7.63			1608	
TW-36	8.50			1612	
TW-42	8.57			1613	
TW-43	7.33			1616	
EW16	7.55			1620	
TW-04	7.65			1622	peristaltic
[illegible]	[illegible]			1624	

EW12	7.13	1624
TW50	7.07	1627
EW11	7.22	1630
24-TW-16	8.17	___ ? peristaltic

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 06-MW25 Date: 12/10/13

Sampling Personnel: SH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated Bladder

Cycles per min: 4 Pressure: 20 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 4.90 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 15.05 ft

SAMPLE INFORMATION

Sample Depth: 9.5 ft

Purge Start Time: 1055

Sample Time: 1115 Sample ID: 06-MW25-121013

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1100	400	4.93	18.4	0.60	0.43	7.59	-82.5	9.05	
1103	400	4.93	18.5	0.60	0.23	7.59	-91.5	7.34	
1106	400	4.93	18.6	0.60	0.10	7.60	-108.3	6.73	
1109	400	4.93	18.5	0.60	0.06	7.60	-110.1	6.21	
1112	400	4.93	18.5	0.60	0.05	7.59	-112.8	5.95	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 06-MW25 Date: 12/13/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated bladder

Cycles per min: ~~MN~~ 4 Pressure: 20 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 4.86 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 9.5 ft

Purge Start Time: 0758

Sample Time: 0825 Sample ID: 06-MW25-121313

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS: Nitrates only (Resample)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0810	400	4.90	18.3	0.495	0.01	7.46	-120.2	6.62	1 system volume purged
0813	400	4.90	18.2	0.495	0.01	7.45	-126.0	6.59	
0816	400	4.90	18.3	0.496	0.01	7.45	-131.9	5.21	
0819	400	4.90	18.4	0.497	0.01	7.45	-134.1	3.28	
0822	400	4.90	18.3	0.497	0.01	7.44	-135.4	2.86	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 06-MW26 Date: 12/10/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated Bladder

Cycles per min: 4 Pressure: 20 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.89 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 14.7 ft

SAMPLE INFORMATION

Sample Depth: 9.5 ft

Purge Start Time: 0920

Sample Time: 0945 Sample ID: 06-MW26-121013

QC Sample Type: MS/MSD QC Sample Time: 0945

QC Sample ID: 06-MW26-121013

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0925	400	5.89	18.5	0.75	0.24	7.75	-41.9	1.06	
0928	400	5.90	18.6	0.74	0.20	7.75	-52.7	1.17	
0931	400	5.90	18.6	0.74	0.16	7.74	-55.1	1.12	
0934	400	5.90	18.6	0.73	0.12	7.73	-59.7	1.04	
0937	400	5.90	18.7	0.73	0.09	7.73	-60.2	1.13	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 06-MW26 Date: 12/13/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Dedicated

Cycles per min: 4 Pressure: 20 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 5.41 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 14.7 ft

SAMPLE INFORMATION

Sample Depth: 9.5 ft

Purge Start Time: 0752

Sample Time: 0820 Sample ID: 06-MW26-121313

QC Sample Type: MS/MSD QC Sample Time: 0820

QC Sample ID: 06-MW26-121313

COMMENTS: Re-sample for Nitrate.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0755	400	5.91	18.3	0.94	0.06	7.50	-45.6	5.78	
0800	400	5.91	18.4	0.96	0.04	7.56	-77.7	4.21	
0805	400	5.92	18.5	0.92	0.04	7.58	-112.8	3.34	
0810	400	5.92	18.5	0.93	0.04	7.57	-113.4	2.12	
0815	400	5.91	18.5	0.92	0.04	7.57	-114.4	1.74	

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 21-MW 02A Date: 12/10/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder - dedicated

Cycles per min: 4 Pressure: 15 PSI Recharge: 13.5 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 1.1 ppm

Static Depth to Water: – ft

Reference Point: –

Casing Diameter: 2 in

Total Depth: 18.3 ft

SAMPLE INFORMATION

Sample Depth: ~~10~~ 8 ft

Purge Start Time: 1145

Sample Time: 1220 Sample ID: 21-MW02A-121013

QC Sample Type: MS/MSD QC Sample Time: 1220

QC Sample ID: 21-MW02A-121013

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1155	100	–	18.3	0.53	0.79	7.57	-80.1	5.84	
1200	100	–	18.4	0.51	0.92	7.59	-82.1	5.57	
1205	100	–	18.6	0.51	1.00	7.59	-81.0	3.59	
1210	100	–	18.5	0.51	1.01	7.59	-81.4	3.21	
1215	100	–	18.6	0.51	0.91	7.62	-88.5	3.17	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 21-MW09A Date: 12/10/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" QED

Cycles per min: MN Pressure: 20 PSI Recharge: 4 sec Discharge: 1.3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.08 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 10.15 ft

SAMPLE INFORMATION

Sample Depth: ~~9~~ 8 ft

Purge Start Time: 1000

Sample Time: 1035 Sample ID: 21-MW09A-121013

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Casing too small for GW probe.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1010	100	*	15.5	1.09	0.08	7.12	-65.5	16.9	over 1 system volume purged
1015	100		15.9	1.08	0.05	7.11	-80.2	6.58	
1020	100		16.2	1.07	0.03	7.10	-84.1	3.72	
1025	100		16.2	1.06	0.02	7.09	-85.7	2.58	
1030	100		16.3	1.06	0.02	7.08	-87.1	2.83	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 21-IP07 Date: 12/10/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 3 sec Discharge: 1.5 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.13 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 16.3 ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1109

Sample Time: 1145 Sample ID: 21-IP07-121013

QC Sample Type: DUP QC Sample Time: 1150

QC Sample ID: 21-IP07-121013D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1120	~~100~~ 195	7.20	18.1	1.01	0.03	7.33	-128.3	5.78	>1 system volume purged
1125	195	7.21	18.2	1.02	0.03	7.34	-133.9	6.23	
1130	195	7.21	18.3	1.02	0.04	7.34	-136.4	2.81	
1135	195	7.21	18.2	1.03	0.03	7.34	-145.8	3.24	
1140	195	7.21	18.3	1.04	0.03	7.34	-144.7	1.58	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-BB38 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: manual Pressure: 30 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.77 ft

Reference Point: TOC

Casing Diameter: 3/4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 30 ft

Purge Start Time: 1455

Sample Time: 1530 Sample ID: 24-BB38-121213

QC Sample Type: Duplicate QC Sample Time: 1535

QC Sample ID: 24-BB38-121213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1500	100	–	16.5	3.00	1.10	7.02	-59.5	613	
1505	100	–	17.2	3.39	0.48	7.02	-61.4	31	
1510	100	–	17.1	3.83	0.36	6.95	-61.1	34.5	
1515	100	–	17.1	4.19	0.26	6.93	-63.8	32.7	
1520	100	–	17.2	4.23	0.18	6.93	-65.6	33.4	
1525	100	–	17.2	4.29	0.15	6.93	-66.3	31.9	Parameters stable, ok to Sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-BB63 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: manual Pressure: 20 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.93 ft

Reference Point: TOC

Casing Diameter: 3/4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1410

Sample Time: 1440 Sample ID: 24-BB63-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1415	100	—	16.7	0.58	0.39	7.79	-133.0	>1000	
1420	100	—	16.8	0.58	0.20	7.72	-125.2	81	
1425	100	—	16.9	0.60	0.12	7.63	-117.2	53.7	
1430	100	—	16.9	0.62	0.08	7.60	-116.4	52.5	
1435	100	—	16.9	0.62	0.07	7.60	-116.1	50.9	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-BB76 Date: 12/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.9 ppm

Static Depth to Water: 6.95 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: 21 ft

SAMPLE INFORMATION

Sample Depth: 18 ft

Purge Start Time: 1520

Sample Time: 1555 Sample ID: 24-BB76-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1530	100	—	17.8	1.84	0.78	7.00	-153.3	7.26	
1535	100	—	17.7	1.81	0.61	6.98	-153.2	4.35	
1540	100	—	17.7	1.81	0.49	6.96	-152.4	2.15	
1545	100	—	17.8	1.81	0.41	6.95	-152.2	2.57	
1550	100	—	18.0	1.82	0.35	6.95	-152.6	2.34	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-BB80 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: manual Pressure: 20 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.34 ft

Reference Point: TOC

Casing Diameter: 3/4 in

Total Depth: 22.4 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1325

Sample Time: 1355 Sample ID: 24-BB80-121213

QC Sample Type: – QC Sample Time: –

QC Sample ID: –

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1330	100	–	18.5	1.69	0.83	7.40	-111.3	52.8	
1335	100	–	18.8	1.61	0.46	7.40	-126.4	32.7	
1340	100	–	18.6	1.59	0.31	7.35	-126.6	20.7	
1345	100	–	18.6	1.58	0.24	7.32	-127.7	20.4	
1350	100	–	18.5	1.58	0.20	7.30	-128.5	20.1	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A082	Well ID: 24-BB89 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.78 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0830

Sample Time: 0905 Sample ID: 24-BB89-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: Partial Blockage @ ~ 7-8 ft bgs, able to get sample tubing past.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0835	100	—	16.2	3.66	1.20	6.79	-106.3	15.2	
0840	100	—	16.4	3.61	1.07	6.78	-130.1	4.35	
0845	100	—	16.6	3.64	0.69	6.77	-100.1	3.84	
0850	100	—	16.7	3.67	0.37	6.77	-95.9	3.75	
0855	100	—	16.7	3.67	0.31	6.76	-100.7	3.66	
0900	100	—	16.8	3.68	0.25	6.76	-92.6	3.42	Parameters stable,
									ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-EW-4 Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Non-dedicated bladder

Cycles per min: Man Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.95 ft

Reference Point: TOC

Casing Diameter: 4" in

Total Depth: — ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1010

Sample Time: 1045 Sample ID: 24-EW-4-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1013	~~6.96~~ 110	6.96	18.1	2.28	0.14	6.76	-173.3	1.50	
1018	~~7.15~~ 110	7.15	18.7	1.80	0.0	6.76	-191.1	—	
1023	110	7.19	18.7	1.73	0.0	6.77	-193.5	—	
1028	110	7.20	18.8	1.78	0.0	6.77	-201.6	—	
1033	110	7.20	18.7	1.62	0.0	6.77	-208.8	—	
1040	110	7.21	18.8	1.67	0.0	6.77	-209.1	—	
1045	110	7.22	18.7	1.63	0.0	6.77	-210.1	—	Sample

12-11-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW6 Date: ~~24-EW6~~ 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 35 PSI Recharge: 4 sec Discharge: 2 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0-0 ppm	Sample Depth: 20 ft
Static Depth to Water: 6.95 ft	Purge Start Time: 1055
Reference Point: TOC	Sample Time: 1130 Sample ID: 24-EW6-121113
Casing Diameter: 6 in	QC Sample Type: none QC Sample Time: —
Total Depth: 30.6 ft	QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1105	150	7.00	18.8	3.93	0.11	6.75	-110.2	4.92	1 system volume purged
1110	150	7.02	18.9	3.94	0.01	6.75	-116.4	3.87	
1115	150	7.02	18.9	3.94	0.01	6.75	-122.3	4.21	
1120	150	7.02	18.9	3.93	0.01	6.75	-124.6	2.19	
1125	150	7.03	18.9	3.94	0.01	6.75	-126.4	2.51	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW11 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.28 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1653

Sample Time: 1710 Sample ID: 24-EW11-121213

QC Sample Type: DUP QC Sample Time: 1715

QC Sample ID: 24-EW11-121213-D

COMMENTS: MNA

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1656	300	7.30	17.5	7.42	0.12	7.11	-121.2	10.09	1 system volume purged
1659	300	7.30	17.8	8.06	0.01	7.23	-131.6	7.45	
1702	300	7.30	17.7	8.25	0.01	7.23	-132.0	6.51	
1705	300	7.31	17.8	8.25	0.01	7.24	-139.7	5.48	
1708	300	7.31	17.8	8.30	0.01	7.20	-141.3	4.92	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW12 Date: 12-12-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated bladder, 3/4"

Cycles per min: Man Pressure: 25 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.3 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: ~~19~~ 20 ft

Purge Start Time: 1330

Sample Time: 1355 Sample ID: 24-EW12-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1335	120	7.3	18.9	2.94	0.0	6.75	-89.8	3.39	
1340	120	7.3	19.0	2.96	0.0	6.80	-98.9	2.33	
1345	120	7.3	19.0	3.00	0.0	6.80	-101.2	<10	
1350	120	7.3	19.0	3.00	0.0	6.80	-102.4	<10	Sample

12-12-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-EW16 Date: 12/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated 3/4"

Cycles per min: manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.55 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 29.8 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1120

Sample Time: 1155 Sample ID: 24-EW16-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1130	100	7.65	18.0	9.54	0.20	7.26	-160.6	2.97	
1135	100	7.74	17.9	9.54	0.13	7.26	-170.3	2.80	
1140	100	7.81	17.9	9.55	0.12	7.26	-173.0	2.65	
1145	100	7.85	18.0	9.55	0.09	7.26	-179.6	2.43	
1150	100	7.89	18.0	9.56	0.09	7.26	-180.1	2.51	Parameters stable, ok to sample.

TREVET

24-EW28

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: ~~24-EW-28~~ KH Date: 12-12-13

Sampling Personnel: Hch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated bladder (3/4")

Cycles per min: man Pressure: 24 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.95 ft

Reference Point: TOC

Casing Diameter: 4" in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20' ft

Purge Start Time: 0835

Sample Time: 0905 Sample ID: ~~24-EW-28-121213~~ KH 24-EW28-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0839	120	6.97	16.9	3.90	1.35	6.55	-134.2	4.42	
0843	120	~~3.93~~ 7.0	17.1	3.93	1.06	6.58	-139.6	<10	
0848	120	7.0	17.1	3.93	0.80	6.61	-142.5	<10	
0853	120	7.0	17.2	3.93	0.56	6.62	-143.3	<10	
0858	120	7.0	17.2	3.94	0.41	6.62	-143.2	<10	
0903	120	7.0	17.3	3.94	0.34	6.63	-143.9	<10	Sample

KH 12-12-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW29 Date: 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: 90 PSI Recharge: 4 sec Discharge: 3 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 20 ft
Static Depth to Water: 6.61 ft	Purge Start Time: 0854
Reference Point: TOC	Sample Time: 0935 Sample ID: 24-EW29-121113
Casing Diameter: 6" in	QC Sample Type: MS/MSD QC Sample Time: —
Total Depth: 30.75 ft	QC Sample ID:

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0910	110	6.65	18.0	3.93	2.30	6.78	-93.0	20.8	1 system vol purged
0915	110	6.65	18.0	3.93	1.73	6.78	-93.7	22.1	
0920	110	6.68	18.4	3.97	0.36	6.77	-97.2	17.0	
0925	110	6.68	18.4	3.99	0.05	6.77	-100.5	16.8	
0930	110	6.68	18.5	3.99	0.01	6.77	-103.5	16.6	Ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-EW30 Date: 12/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-Dedicated 3/4"

Cycles per min: manual Pressure: 30 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.68 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 29.23 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0850

Sample Time: 0920 Sample ID: 24-EW30-121113

QC Sample Type: MS/MSD QC Sample Time: 0920

QC Sample ID: 24-EW30-121113

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0900	140	6.69	17.5	3.48	0.80	6.97	-83.9	1.42	
0903	200	6.69	18.0	3.47	0.38	6.97	-90.2	1.37	
0906	200	6.69	17.9	3.47	0.29	6.97	-92.0	1.75	
0909	200	6.69	18.1	3.44	0.21	6.97	-94.4	1.17	
0912	200	6.69	18.2	3.43	0.20	6.97	-94.7	1.10	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW31 Date: 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 23 PSI Recharge: 3 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.81 ft

Reference Point: TOC

Casing Diameter: 6 in

Total Depth: 30.37 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1505

Sample Time: 1535 Sample ID: 24-EW31-121113

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1510	140	6.83	17.3	2.51	0.55	6.94	-55.1	12.2	1 system volume purged.
1515	140	6.83	17.5	2.41	0.01	7.01	-81.0	8.78	
1520	140	6.83	17.5	2.42	0.01	7.01	-87.6	7.31	
1525	140	6.83	17.4	2.44	0.01	7.00	-90.4	5.51	
1530	140	6.83	17.5	2.43	0.01	7.00	-92.6	4.96	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW32 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: ~~QED~~ 3/4" Bladder

Cycles per min: MW Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.95 ft

Reference Point: TOC/notch

Casing Diameter: 6 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: ~~25~~ 20 ft

Purge Start Time: 0923

Sample Time: 0950 Sample ID: 24-EW32-121213

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS: N/A

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0930	280	7.96	17.3	4.27	0.01	6.92	-120.2	5.19	1 system volume purged
0934	280	7.96	17.3	4.25	0.01	6.92	-120.7	3.81	
0938	280	7.96	17.3	4.17	0.01	6.93	-121.2	3.96	
0942	280	7.96	17.4	4.07	0.01	6.94	-121.9	4.01	
0946	280	7.96	17.4	4.05	0.01	6.95	-122.2	3.87	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW33 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.01 ft

Reference Point: TOC

Casing Diameter: 6 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: ~~20~~ 25 ft

Purge Start Time: 1052

Sample Time: 1110 Sample ID: 24-EW33-121213

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1055	320	8.04	16.2	2.90	3.07	6.95	-109.3	3.25	1 system volume purged
1058	320	8.04	16.3	2.89	0.01	6.96	-115.7	2.35	
1101	320	8.04	16.4	2.92	0.01	6.96	-118.7	1.52	
1104	320	8.04	16.4	2.93	0.01	6.96	-121.6	1.85	
1107	320	8.04	16.4	2.94	0.01	6.95	-123.6	1.73	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW34 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 40 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.07 ft

Reference Point: TOC/mark

Casing Diameter: 4 in

Total Depth: 31.05 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1147

Sample Time: 1205 Sample ID: 24-EW34-121213

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1150	360	8.08	17.7	5.65	0.01	6.71	-91.0	2.57	1 system volume purged
1153	360	8.08	17.8	5.77	0.01	6.75	-93.4	3.87	
1156	360	8.08	17.8	5.77	0.01	6.76	-93.8	4.81	
1159	360	8.08	17.8	5.77	0.01	6.76	-93.7	3.92	
1202	360	8.08	17.8	5.77	0.01	6.76	-93.7	2.11	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-IWS Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: ~~20~~ 30 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.55 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 10 ft

Purge Start Time: 1501

Sample Time: 1520 Sample ID: 24-IWS-121213

QC Sample Type: DUP QC Sample Time: 1525

QC Sample ID: 24-IWS-121213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1505	230	6.61	18.7	1.74	0.01	6.94	-108.0	12.0	1 system volume purged
1508	230	6.62	18.8	1.62	0.01	6.91	-116.9	9.42	
1511	230	6.62	18.8	1.62	0.01	6.90	-118.5	8.75	
1514	230	6.62	18.8	1.62	0.01	6.90	-118.3	7.41	
1517	230	6.62	18.8	1.61	0.01	6.90	-118.3	6.50	ok to sample

JM

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-IW8 Date: 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: NW Pressure: 20 PSI Recharge: 4 sec Discharge: 1 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0 ppm	Sample Depth: 17.5 ft
Static Depth to Water: 7.34 ft	Purge Start Time: ~~1200~~ 1202
Reference Point: TOC	Sample Time: 1235 Sample ID: 24-IW8-121113
Casing Diameter: 6 in	QC Sample Type: none QC Sample Time: —
Total Depth: _____ ft	QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1210	110	7.37	18.3	3.63	0.05	6.82	-118.7	7.52	1 system volume purged
1215	110	7.38	18.6	3.66	0.04	6.82	-123.3	5.29	
1220	110	7.39	18.6	3.66	0.02	6.82	-128.2	5.74	
1225	110	7.40	18.7	3.67	0.01	6.82	-133.5	4.01	
1230	110	7.41	18.7	3.67	0.01	6.82	-135.1	3.52	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-IW21 Date: 12/11/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated 3/4"

Cycles per min: manual Pressure: 70 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.88 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 30.72 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1005

Sample Time: 1035 Sample ID: 24-IW21-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1010	100	6.97	18.3	3.14	0.40	7.07	-86.2	23.5	
1015	100	7.15	18.4	3.10	0.36	7.07	-87.2	19.9	
1020	100	7.21	18.4	3.09	0.31	7.07	-83.6	20.3	
1025	100	7.27	18.3	3.08	0.28	7.07	-84.3	20.7	
1030	100	7.32	18.4	3.08	0.25	7.06	-86.7	20.4	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083

Well ID: 24-TW-04
Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: _____ Pressure: _____ PSI Recharge: _____ sec Discharge: _____ sec

WELL INFORMATION

PID Reading: 0.0 ppm
Static Depth to Water: 7.72 ft
Reference Point: TOC
Casing Diameter: 3/4 in
Total Depth: 29.4 ft

SAMPLE INFORMATION

Sample Depth: 20 ft
Purge Start Time: 1547
Sample Time: 1615 Sample ID: 24-TW-04-121213
QC Sample Type: — QC Sample Time: —
QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1550	100	—	18.1	0.89	0.26	7.67	-132.8	997	
1555	100	—	18.1	1.21	0.16	7.41	-109.4	973	
1600	100	—	18.3	1.28	0.09	7.37	-116.2	952	
1605	100	—	18.4	1.30	0.09	7.34	-118.8	945	
1610	100	—	18.4	1.31	0.08	7.32	-119.7	931	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-11 Date:

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" mini bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 2 sec Discharge: 1 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 15 ft
Static Depth to Water: 5.36 ft	Purge Start Time: 1547
Reference Point: TOC	Sample Time: 1610 Sample ID: 24-TW-11-121213
Casing Diameter: 1 in	QC Sample Type: none QC Sample Time: —
Total Depth: _____ ft	QC Sample ID: —

COMMENTS: MNA

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1550	100		19.2	3.86	2.09	6.65	-128.2	+1000	out of range
1553	100		19.2	3.86	0.05	6.67	-130.7	+1000	out of range
1556	100		19.2	3.87	0.01	6.68	-131.1	29	
1559	100		19.2	3.87	0.01	6.68	-131.9	21	
1602	100		19.2	3.87	0.01	6.68	-133.4	22	
1605	100		19.2	3.87	0.01	6.68	-134.2	19	ok to sample

JM

* probe won't fit in hole

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-14 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.72 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 1145

Sample Time: 1215 Sample ID: 24-TW-14-121213

QC Sample Type: Duplicate QC Sample Time: 1220

QC Sample ID: 24-TW-14-121213-D

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1150	100	—	18.2	1.91	0.63	7.08	-83.9	12.6	
1155	100	—	18.1	1.90	0.47	7.10	-85.9	4.97	
1200	100	—	18.3	1.92	0.37	7.10	-85.8	3.21	
1205	100	—	18.3	1.93	0.29	7.10	-85.5	3.06	
1210	100	—	18.3	1.93	0.25	7.10	-85.1	2.55	Parameters stable, ok to sample.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-Tw-16 Date: 12/12/13

Sampling Personnel: JH

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.23 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1640

Sample Time: 1710 Sample ID: 24-Tw-16-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1645	100	—	16.2	1.81	0.75	6.83	-39.5	109.2	
1650	100	—	16.2	2.93	0.50	6.74	-27.1	65.6	
1655	100	—	16.0	3.53	0.35	6.76	-24.8	42.7	
1700	100	—	16.1	3.61	0.25	6.78	-26.2	43.9	
1705	100	—	16.1	3.60	0.22	6.79	-27.3	41.6	Parameters stable, ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-25 Date: 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 23 PSI Recharge: 3 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.21 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 22.5 ft

Purge Start Time: 1350

Sample Time: _____ Sample ID: 24-TW-25-121113

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1355	110	*	17.8	4.56	0.86	6.50	-62.7	62.7	1 system volume purged
1400	110		17.9	4.61	0.33	6.35	-52.1	61.3	
1405	110		17.9	4.59	0.01	6.27	-41.2	47.2	
1410	110		17.9	4.63	0.01	6.27	-37.2	36.9	
1415	110		17.9	4.64	0.01	6.21	-31.3	36.8	
1420	110		17.9	4.57	0.01	6.17	-29.7	35.7	ok to sample

*unable to measure.
Probe will not fit in hole.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-26 Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4 non-dedicated bladder

Cycles per min: man. Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.91 ft

Reference Point: TOC/notch

Casing Diameter: 1" in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: ~~21~~ 22.5 ft

Purge Start Time: 1404

Sample Time: 1440 Sample ID: 24-TW-26-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * unable to monitor depth to GW during sampling due to small diameter.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1410	100	*	16.8	3.38	0.0	6.44	-74.3	46.6	
1415	100	*	16.8	2.90	0.0	6.53	-70.3	40.1	
1420	100	*	16.7	2.64	0.0	6.57	-71.3	34.8	
1425	100	*	16.7	2.55	0.0	6.57	-72.5	27.8	
1430	100	*	16.7	2.53	0.0	6.57	-74.3	26.7	
1435	100	*	16.7	2.53	0.0	6.57	-74.6	26.9	sample

KH 12-11-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-27 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 23 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.63 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 25.20 ft

SAMPLE INFORMATION

Sample Depth: 22.5 ft

Purge Start Time: 0829

Sample Time: 0910 Sample ID: 24-TW-27-121213

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0835	100	*	16.4	3.31	0.01	6.94	-99.5	42.0	1 system volume purged
0840	100		16.7	3.03	0.01	6.99	-106.2	18.6	
0845	100		16.8	2.42	0.01	7.09	-120.9	14.7	
0850	100		16.9	2.27	0.01	7.11	-126.4	11.3	
0855	100		16.9	2.27	0.01	7.10	-129.3	9.13	
0900	100		16.9	2.26	0.01	7.10	-130.2	7.34	
0905	100		16.9	2.25	0.01	7.10	-131.5	6.68	ok to sample

* Can't fit probe in hole.

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-28 Date: 12-12-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated bladder (3/4")

Cycles per min: Man Pressure: 20 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 8.15 ft

Reference Point: TOC

Casing Diameter: 1" in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25' ft

Purge Start Time: 0948

Sample Time: 1015 Sample ID: 24-TW-28-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * Unable to monitor depth to GW while sampling due to small well diameter.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0953	100	*	14.9	5.95	0.0	6.53	-82.0	4.84	
0958	100	*	14.9	5.85	0.0	6.57	-82.2	<10	
1003	100	*	14.9	5.80	0.0	6.58	-84.3	<10	
1008	100	*	14.8	5.78	0.0	6.59	-83.6	<10	
1013	100	*	14.9	5.80	0.0	6.59	-84.8	<10	Sample

KH 12/12/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-36 Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated bladder (3/4")

Cycles per min: Man. Pressure: 25 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: _____ ppm	Sample Depth: 25' ft
Static Depth to Water: 8.54 ft	Purge Start Time: 1625
Reference Point: TOC	Sample Time: 1630 Sample ID: 24-TW-36-121113
Casing Diameter: 1" in	QC Sample Type: — QC Sample Time: —
Total Depth: 32.50 ft	QC Sample ID: —

COMMENTS: * unable to monitor depth to GW during sampling due to small well diameter

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1610	100	*	17.1	5.72	0.0	6.50	-75.0	4.98	
1615	100	*	17.2	5.67	0.0	6.49	-80.3	3.77	
1620	100	*	17.2	5.64	0.0	6.48	-82.9	<10	
1625	100	*	17.2	5.61	0.0	6.46	-84.3	<10	Sample

KAH

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-37 Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" non-dedicated bladder

Cycles per min: Man Pressure: 25 PSI Recharge: 5.0 sec Discharge: 2.0 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 25 ft
Static Depth to Water: 7.52 ft	Purge Start Time: 0855
Reference Point: TOC	Sample Time: 0930 Sample ID: 24-TW-37-121113
Casing Diameter: 1 in	QC Sample Type: — QC Sample Time: —
Total Depth: — ft	QC Sample ID: —

COMMENTS: * well diameter too narrow to monitor drawdown.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0900	100	*	17.0	2.72	3.18	6.67	-89.1	1.13	
0906	100	*	17.2	2.97	0.33	6.60	-94.1	Stable <10	
0912	100	*	17.2	3.10	0.17	6.60	-94.7	"	
0917	100	*	17.4	3.34	0.0	6.60	-98.9	"	
0922	100	*	17.4	3.48	0.0	6.60	-103.0	"	
0927	100	*	17.4	3.53	0.0	6.6	-101.2	"	Sample

12-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-41 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 200-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.03 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1406

Sample Time: 1425 Sample ID: ~~[illegible]~~ 24-TW-41-121211

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1409	100		18.0	4.11	0.01	6.70	-104.6	19.5	1 system volume purged
1412	100		17.8	4.29	0.01	6.69	-98.1	13.9	
1415	100		17.7	4.25	0.01	6.71	-94.2	9.81	
1418	100		17.7	4.10	0.01	6.76	-92.9	8.53	
1421	100		17.7	4.09	0.01	6.76	-92.7	7.66	
1424	100		18.0	4.08	0.01	6.76	-92.6	8.67	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-42 Date: 12/11/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: QED 3/4" Bladder

Cycles per min: MN Pressure: 23 PSI Recharge: 3 sec Discharge: 1.2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: _____ ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: 30.75 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1600

Sample Time: 1640 Sample ID: 24-TW-42-121113

QC Sample Type: NONE QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1605	100	*	16.7	5.90	4.80	6.79	-96.7	15.0	1 system volume purged
1610	100		17.0	6.76	0.07	6.76	-109.1	50.9	
1615	100		16.9	6.63	0.01	6.80	-115.5	34.9	
1620	100		17.0	6.56	0.01	6.82	-119.9	12.0	
1625	100		16.9	6.56	0.01	6.82	-121.3	8.21	
1630	100		16.9	6.60	0.01	6.82	-122.6	5.98	
1635	100		17.0	6.60	0.01	6.83	-124.6	5.73	ok to sample

* probe won't fit in hole

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083

Well ID: 24-TW-43
Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" non-dedicated bladder

Cycles per min: _____ Pressure: 24 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.53 ft

Reference Point: TOC

Casing Diameter: 1" in

Total Depth: 31.68 ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1510

Sample Time: 1535 Sample ID: 24-TW-43-121113

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * unable to monitor depth to GW while sampling due to small well diameter.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1515	100	*	17.6	4.91	0.0	6.35	-68.0	165	
1520	100	*	17.7	5.15	0.0	6.37	-76.9	5.9	
1525	100	*	17.7	5.27	0.0	6.38	-80.2	<10	
1530	100	*	17.7	5.33	0.0	6.39	-80.9	<10	Sample

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TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-47 Date: 12-12-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Non-dedicated bladder 3/4"

Cycles per min: Man. Pressure: 22 PSI Recharge: 3.0 sec Discharge: 6.0 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.5 ft

Reference Point: TOC

Casing Diameter: 1" in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: ~~15.50~~ 17.5 ft

Purge Start Time: 15.50

Sample Time: 1620 Sample ID: 24-TW-47

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * unable to monitor GW depth due to small well diameter,

PURGE LOG			WATER QUALITY PARAMETERS						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1555	100	*	18.3	2.68	0.22	6.54	-98.8	11.7	
1600	100	*	18.6	2.67	0.0	6.52	-103.4	6.2	
1605	100	*	18.6	2.47	0.0	6.54	-106.3	<10	
1610	100	*	18.7	2.35	0.0	6.56	-107.9	<10	
1615	100	*	18.7	2.33	0.0	6.57	-109.0	<10	Sample

12/12/13

TREVET

Low-Flow Purging and Sampling Log

Project: NAVSTA TI
Job No.: A083

Well ID: 24-TW-48
Date: 12-12-13

Sampling Personnel: Koch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: Manual Pressure: 20 PSI Recharge: 3 sec Discharge: 1 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 6.84 ft

Reference Point: TOC mark

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 16 ft

Purge Start Time: 1450

Sample Time: 1515 Sample ID: 24-TW-48-121213

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: * unable to monitor GW depth due to small well diameter

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1455	100	*	18.7	3.17	0.0	6.57	-105.5	19.7	
1500	100	*	18.9	3.22	0.0	6.54	-110.3	27.0	
1505	100	*	18.8	3.10	0.0	6.55	-113.0	24.3	
1510	100	*	18.8	3.03	0.0	6.56	-114.7	23.0	sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-49 Date: 12-12-13

Sampling Personnel: Hach

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" non-dedicated bladder pump

Cycles per min: _____ Pressure: 20 PSI Recharge: 3.0 sec Discharge: 1.0 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 17.5 ft
Static Depth to Water: 8.95 ft	Purge Start Time: 1110
Reference Point: TOC Notch	Sample Time: 1200 Sample ID: 24-TW-49-121213
Casing Diameter: 1" in	QC Sample Type: — QC Sample Time: —
Total Depth: _____ ft	QC Sample ID: —

COMMENTS: * Unable to monitor GW depth due to small well diameter.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1115	100	*	15.2	3.53	0.10	6.05	3.5	86.3	
1120	100	*	14.7	3.31	0.0	6.19	-2.1	77.5	
1125	100	*	13.8	3.13	0.0	6.28	-3.9	59.6	
1130	100	*	16.6	3.08	0.0	6.26	5.8	47.9	
1135	100	*	17.1	2.94	0.0	6.28	13.8	26.1	
1140	100	*	17.4	2.81	0.0	6.36	19.0	6.81	
1145	100	*	17.5	2.39	0.0	6.45	10.6	<10	
1150	100	*	17.6	2.37	0.0	6.46	9.9	<10	
1155	100	*	17.6	2.34	0.0	6.48	8.6	<10	Sample

KH 12-12-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A083	Well ID: 24-TW-50 Date: 12-11-13

Sampling Personnel: Hoch

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" non-dedicated bladder

Cycles per min: Man. Pressure: 20 PSI Recharge: 4 sec Discharge: 1.4 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 17.5 ft
Static Depth to Water: 6.71 ft	Purge Start Time: 1124
Reference Point: TOC	Sample Time: 1155 Sample ID: 24-TW-50-121113
Casing Diameter: 1" in	QC Sample Type: — QC Sample Time: —
Total Depth: 23.15 ft	QC Sample ID: —

COMMENTS: * Unable to monitor depth to GW during sampling due to small well diameter.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1133	100	*	18.8	~~0.0~~ 3.05	0.0	6.64	-77.5	14.8	
1138	100	*	19.0	3.06	0.0	6.63	-68.6	15.3	
1143	100	*	18.9	3.03	0.0	6.61	-60.3	16.4	
1148	100	*	19.0	3.01	0.0	6.60	-59.6	15.7	
1153	100	*	19.0	3.00	0.0	6.60	-60.1	15.8	sample

12-11-13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-53 Date: 12/12/13

Sampling Personnel: JM

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" Bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 3 sec Discharge: 2 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: ~~7.61~~ JM 6.51 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 1319

Sample Time: 1345 Sample ID: 24-TW-53-121213

QC Sample Type: none QC Sample Time: —

QC Sample ID: —

COMMENTS:

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1322	100	*	18.1	3.62	0.30	6.86	-99.7	7.17	1 system volume purged
1325	100		18.6	3.32	0.25	6.87	-108.0	9.11	
1328	100		18.9	3.05	0.07	6.86	-113.9	8.51	
1331	100		19.0	2.73	0.05	6.86	-116.8	5.91	
1334	100		19.0	2.53	0.01	6.84	-116.5	9.28	
1337	100		19.0	2.46	0.01	6.84	-116.3	8.97	
1340	100		19.0	2.45	0.01	6.83	-115.6	7.32	ok to sample

JM

*can't fit probe down hole

TREVET

Soil Gas Purging and Sampling Log	Project: NAVSTA TI Job No.: A111-003	Well ID: 21-SG-04 Date: 12/19/13

Sampling Personnel: DE, PA

WELL INFORMATION

Soil Gas Probe Installation Date/Time: ~~11/2010~~ 11/4/2010 Sub-slab Probe: ~~yes~~ no

Equilibration Time: >48 hr. *(equilibration criteria: >2 hr for direct push; >48 hr for hand auger)*

Soil Gas Probe Depth: 5 ft. Tubing Diameter: 1/4 in Tubing Length: 6.5 ft.

Implant Dimensions: _____ Sand Pack Dimensions: 12 in x 1.5 in

Dry Bentonite Dimensions: _____ One Purge Volume: 136 ml

SHUT-IN TEST

Flow Regulator ID: 0A00936 Initial Manifold Vacuum: 15 in Hg (203.9 inWC) *(>100 in. WC)* Valve1: 3VC00022 Valve2: 3VC00028

~~Manifold~~ gauge ID: AVG03327 Final Manifold Vacuum: 15 in Hg *(acceptable loss: <0.5 in. WC/min.)*

Pump Type: electric Elapsed Shut-in Test Time: 5 min. *(>1 min.)*

WEATHER DATA *Sampling to be preceded by at least 5 days without rain events >0.5 in. accumulation*

Barometric Pressure: 29.83 in Hg Ambient Temperature: 56°F Time: 0930

>0.5 in. Rain Event in Last 5 days?: no

PURGING DATA *Purging to be performed at a flow of 100-200 ml/min. and vacuum of <100 in. WC*

Calculated Purge Volume: 950 ml Optimal Number of Purge Volumes (from PV Test): 7

Purge Start Time: 0945 Purge Flow Rate: 200 ml/min Purge Vacuum: 0 inwc.

Purge Finish Time: 0950 Final Purge Volume: 950 ml No. of Purge Volumes: 7

Tracer Gas Used: helium Tracer Gas Concentration in Shroud: 25% He

SAMPLE INFORMATION

Sample ID: 21-SG-04 Canister ID: SSC00215

Initial Vacuum: 29.5 in Hg Time: 0959 Final Vacuum: 5 in Hg Time: 1015

Duplicate Sample ID: none Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

1 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

3 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

10 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

COMMENTS *Sub-slab sampling not subject to dry-weather requirement*

13.59 inWC/in Hg

TREVET

Soil Gas Purging and Sampling Log	Project: NAVSTA TI Job No.: A111-003	Well ID: 21-SG-05 Date: 12/19/13

Sampling Personnel: DE, PH

WELL INFORMATION

Soil Gas Probe Installation Date/Time: 11/17/10 Sub-slab Probe: ~~yes~~ no

Equilibration Time: >48hrs *(equilibration criteria: >2 hr for direct push; >48 hr for hand auger)*

Soil Gas Probe Depth: 5 ft Tubing Diameter: 1/4 in Tubing Length: 6.5 ft.

Implant Dimensions: _____ Sand Pack Dimensions: 12in x 1.5in

Dry Bentonite Dimensions: _____ One Purge Volume: 136

SHUT-IN TEST

Flow Regulator ID: 0A01542 Initial Manifold Vacuum: 24.0 *(>100 in. WC)* valve: 3VC00014

~~Manifold~~ gauge ID: AVG03291 Final Manifold Vacuum: 24.0 *(acceptable loss: <0.5 in. WC/min.)*

Pump Type: electric Elapsed Shut-in Test Time: 2 min *(>1 min.)*

WEATHER DATA *Sampling to be preceded by at least 5 days without rain events >0.5 in. accumulation*

Barometric Pressure: 29.82 Ambient Temperature: 57°F Time: 1603

>0.5 in. Rain Event in Last 5 days?: no

PURGING DATA *Purging to be performed at a flow of 100-200 ml/min. and vacuum of <100 in. WC*

Calculated Purge Volume: 950 ml Optimal Number of Purge Volumes (from PV Test): 7

Purge Start Time: 1605 Purge Flow Rate: 200 ml/min Purge Vacuum: 0

Purge Finish Time: 1610 Final Purge Volume: 950ml No. of Purge Volumes: 7

Tracer Gas Used: helium Tracer Gas Concentration in Shroud: 25% He

SAMPLE INFORMATION

Sample ID: 21-SG-05 Canister ID: SSC00216

Initial Vacuum: 29.8 inHg Time: 1616 Final Vacuum: 5.0 inHg Time: 1631

Duplicate Sample ID: none Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

1 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

3 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

10 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

COMMENTS *Sub-slab sampling not subject to dry-weather requirement*

TREVET

Soil Gas Purging and Sampling Log	Project: NAVSTA TI Job No.: A111-003	Well ID: 21-SG-27 Date: 12/19/13

Sampling Personnel: DE & PH

WELL INFORMATION

Soil Gas Probe Installation Date/Time: 2/6/2012 Sub-slab Probe: yes ✓

Equilibration Time: >48hr *(equilibration criteria: >2 hr for direct push; >48 hr for hand auger)*

Soil Gas Probe Depth: 0.9 ft. Tubing Diameter: 1/4 in. Tubing Length: 0.9 ft.

Implant Dimensions: _____ Sand Pack Dimensions: 5in x 1in

Dry Bentonite Dimensions: _____ One Purge Volume: 23 ml

SHUT-IN TEST regulator #2: OAØØ247 gauge 2: AVGØ8373

Flow Regulator ID: #1 OAØØ945 Initial Manifold Vacuum: 21.0/21.0 *(>100 in. WC)* valve: 3VCØØØ24

~~Manifold~~ gauge 1 ID: AVGØ2956 Final Manifold Vacuum: 21.0/21.0 *(acceptable loss: <0.5 in. WC/min.)*

Pump Type: electric Elapsed Shut-in Test Time: 2 *(>1 min.)*

WEATHER DATA *Sampling to be preceded by at least 5 days without rain events >0.5 in. accumulation*

Barometric Pressure: 29.81 inHg Ambient Temperature: 59 Time: 1345

>0.5 in. Rain Event in Last 5 days?: no

PURGING DATA *Purging to be performed at a flow of 100-200 ml/min. and vacuum of <100 in. WC*

Calculated Purge Volume: 164 ml Optimal Number of Purge Volumes (from PV Test): 7

Purge Start Time: 1403 Purge Flow Rate: 200 ml/min Purge Vacuum: 0

Purge Finish Time: 1404 Final Purge Volume: 164 ml No. of Purge Volumes: 7

Tracer Gas Used: helium Tracer Gas Concentration in Shroud: 25% He

SAMPLE INFORMATION

Sample ID: 21-SG-27 Canister ID: SSCØØ217

Initial Vacuum: 28.0 Time: 1410 Final Vacuum: 5.0 Time: 1426

Duplicate Sample ID: 21-SG-27-DUP Canister ID: SSCØØ218

Initial Vacuum: 29.0 Time: 1410 Final Vacuum: 5.0 Time: 1426

1 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

3 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

10 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

COMMENTS *Sub-slab sampling not subject to dry-weather requirement*

Soil Gas Purging and Sampling Log	Project: NAVSTA TI Job No.: A111-003	Well ID: 21-SG-30 Date: 12/19/13

Sampling Personnel: DE, PH

WELL INFORMATION

Soil Gas Probe Installation Date/Time: 2/7/2012 Sub-slab Probe: yes ✓

Equilibration Time: >48hr *(equilibration criteria: >2 hr for direct push; >48 hr for hand auger)*

Soil Gas Probe Depth: 0.9 ft Tubing Diameter: 1/4 in Tubing Length: 0.9 ft.

Implant Dimensions: _____ Sand Pack Dimensions: 5in x 1in

Dry Bentonite Dimensions: _____ One Purge Volume: 24 ml

SHUT-IN TEST Valve: 3VCØØØ964

Flow Regulator ID: DAØ1654 Initial Manifold Vacuum: 20.5 inHg *(>100 in. WC)*

~~Manifold~~ Pump ID: AVGØ3494 Final Manifold Vacuum: 20.5 inHg *(acceptable loss: <0.5 in. WC/min.)*

Pump Type: electric Elapsed Shut-in Test Time: 2 *(>1 min.)*

WEATHER DATA *Sampling to be preceded by at least 5 days without rain events >0.5 in. accumulation*

Barometric Pressure: 29.82 inHg Ambient Temperature: 60°F Time: 1500

>0.5 in. Rain Event in Last 5 days?: no

PURGING DATA *Purging to be performed at a flow of 100-200 ml/min. and vacuum of <100 in. WC*

Calculated Purge Volume: 165 Optimal Number of Purge Volumes (from PV Test): 7

Purge Start Time: 1500 Purge Flow Rate: 200 ml/min Purge Vacuum: 0

Purge Finish Time: 1501 Final Purge Volume: 165 ml No. of Purge Volumes: 7

Tracer Gas Used: helium Tracer Gas Concentration in Shroud: 25% He

SAMPLE INFORMATION

Sample ID: 21-SG-30 Canister ID: SSCØØ219

Initial Vacuum: 29.0 inHg Time: 1506 Final Vacuum: 5.0 inHg Time: 1521

Duplicate Sample ID: none Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

1 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

3 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

10 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

COMMENTS *Sub-slab sampling not subject to dry-weather requirement*

Soil Gas Purging and Sampling Log	Project: NAVSTA TI Job No.: A111-003	Well ID: 21-SG-31 Date: 12/19/13

Sampling Personnel: DE, PH

WELL INFORMATION

Soil Gas Probe Installation Date/Time: 2/7/2012 Sub-slab Probe: yes ✓

Equilibration Time: 748 hr. *(equilibration criteria: >2 hr for direct push; >48 hr for hand auger)*

Soil Gas Probe Depth: 0.9 ft. Tubing Diameter: 1/4 in Tubing Length: 0.9 ft.

Implant Dimensions: _____ Sand Pack Dimensions: 5in x 1in

Dry Bentonite Dimensions: _____ One Purge Volume: 24 ml

SHUT-IN TEST

valve: 3VC00015
gauge: AVG02777

Flow Regulator ID: OA00079 Initial Manifold Vacuum: 18.0 in Hg *(>100 in. WC)*

~~Manifold~~ gauge ID: ~~3VC00015~~ PH Final Manifold Vacuum: 18.0 in Hg *(acceptable loss: <0.5 in. WC/min.)*

Pump Type: electric Elapsed Shut-in Test Time: 2 *(>1 min.)*

WEATHER DATA *Sampling to be preceded by at least 5 days without rain events >0.5 in. accumulation*

Barometric Pressure: 29.85 in Hg Ambient Temperature: 60°F Time: 1130

>0.5 in. Rain Event in Last 5 days?: no

PURGING DATA *Purging to be performed at a flow of 100-200 ml/min. and vacuum of <100 in. WC*

Calculated Purge Volume: 165 ml Optimal Number of Purge Volumes (from PV Test): 7

Purge Start Time: 1149 Purge Flow Rate: 200 ml/min Purge Vacuum: 0 in WC

Purge Finish Time: 1150 Final Purge Volume: 165 ml No. of Purge Volumes: 7

Tracer Gas Used: helium Tracer Gas Concentration in Shroud: 25 % He

SAMPLE INFORMATION

Sample ID: 21-SG-31 Canister ID: SSC00214

Initial Vacuum: 29.0 in Hg Time: 1153 Final Vacuum: 5.0 Time: 1210

Duplicate Sample ID: none Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

1 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

3 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

10 PV Sample ID: N/A Canister ID: _____

Initial Vacuum: _____ Time: _____ Final Vacuum: _____ Time: _____

COMMENTS *Sub-slab sampling not subject to dry-weather requirement*

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 06-MW25 Date: 12/18/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 12 sec Discharge: 3 sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 4.76 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 13.7 ft

SAMPLE INFORMATION

Sample Depth: 9.5 ft

Purge Start Time: 1350

Sample Time: 1409 Sample ID: none

QC Sample Type: none QC Sample Time:

QC Sample ID:

COMMENTS: resampled for field test kits only (Fe+2 and Mn)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1352	440	4.82	18.0	625	0.59	7.27	-42.6	14.1	
1355	440	4.82	18.1	614	0.28	7.36	-69.8	11.1	
1358	440	4.81	18.1	614	0.09	7.37	-84.6	8.4	
1401	440	4.83	18.1	620	0.00	7.39	-94.1	6.8	
1404	440	4.82	18.1	617	0.01	7.38	-94.4	5.8	
1407	440	4.81	18.1	614	0.00	7.41	-95.7	5.0	ok to sample pH

12/18/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 06-MW26 Date: 12/18/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: dedicated bladder

Cycles per min: MN Pressure: 20 PSI Recharge: 12.0 sec Discharge: 3.0 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0 ppm	Sample Depth: 9.5 ft
Static Depth to Water: 5.65 ft	Purge Start Time: 1324
Reference Point: TOC	Sample Time: 1340 Sample ID: none
Casing Diameter: 4 in	QC Sample Type: none QC Sample Time:
Total Depth: 14.7 ft	QC Sample ID:

COMMENTS: resampled for field test kits only (Fe+2 and Mn)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1328	440	5.60	18.6	897	0.43	7.39	-53.6	2.7	
1331	440	5.62	18.6	894	0.47	7.41	-77.3	2.7	
1334	440	5.64	18.6	887	0.44	7.42	-76.7	1.5	
1337	440	5.66	18.6	889	0.35	7.44	-84.4	1.2	ok to sample pd

12/18/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-BB76 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: — ppm	Sample Depth: 18 ft
Static Depth to Water: 7.49 ft	Purge Start Time: 1108
Reference Point: TOC	Sample Time: ~~1140~~ pm Sample ID: ~~24-BB76-121813~~ pm
Casing Diameter: 1/2 in	QC Sample Type: None QC Sample Time: —
Total Depth: 21 ft	QC Sample ID: —

COMMENTS: resampled for field test kits only

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1115	100	—	18.6	1.37	0.00	7.17	-136.1	8.54	purged 1+ system volume
1120	100	—	18.6	1.32	0.00	7.15	-133.7	4.12	
1125	100	—	18.7	1.28	0.00	7.14	-132.5	4.04	
1130	100	—	18.7	1.28	0.00	7.12	-131.0	3.26	
1135	100	—	18.7	1.29	0.00	7.10	-129.8	2.45	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-~~EW~~6 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: — ppm	Sample Depth: 20 ft
Static Depth to Water: 6.94 ft	Purge Start Time: 1142
Reference Point: TOC	Sample Time: ~~1213~~ 1215 Sample ID: ~~24-EW6-121813~~
Casing Diameter: 6 in	QC Sample Type: None QC Sample Time: —
Total Depth: 30.8 ft	QC Sample ID: —

COMMENTS: MNA → Resampled w/peristaltic for HACH kit test.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1150	150	7.01	18.5	3.93	0.00	6.50	-110.0	6.91	Purged 1+ System Volume
1155	150	7.01	18.7	3.99	0.00	6.53	-116.9	6.32	
1200	150	7.01	18.9	4.01	0.00	6.53	-118.3	5.28	
1205	150	7.01	18.9	4.00	0.00	6.53	-120.2	2.92	
1210	150	7.01	19.1	4.01	0.00	6.53	-121.2	2.24	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW11 Date: 12/20/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 7.33 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0925

Sample Time: 0955 Sample ID: ~~24-EW11-122013~~ 3

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA → resampled for HACH kit test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0930	140	7.35	17.5	8.28	0.19	7.51	-162.4	2.12	purged 2+ system Vol.
0935	140	7.35	17.5	8.57	0.00	7.49	-160.3	1.09	
0940	140	7.35	17.5	8.07	0.00	7.45	-149.9	1.12	
0945	140	7.35	17.6	8.10	0.00	7.40	-145.1	<10	
0950	140	7.35	17.6	8.11	0.00	7.41	-143.4	<10	OK to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: ~~EW 12~~ 24-EW12 Date: 12/20/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 7.38 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: _____ ft

SAMPLE INFORMATION

Sample Depth: 19 ft

Purge Start Time: 0852 pd

Sample Time: ~~0920~~ pd Sample ID: ~~24-EW12-12/20~~/13

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS:

MNA → resampled for HACH Kit test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0855	150	7.40	19.2	3.04	0.09	7.03	-128.7	3.28	purged 1x system volume
0900	150	7.40	19.2	3.12	0.01	7.00	-115.0	2.42	
0905	150	7.40	19.2	3.14	0.00	7.01	-110.2	1.75	
0910	150	7.40	19.2	3.14	0.00	7.02	-109.7	1.52	
0915	150	7.40	19.2	3.16	0.00	7.01	-109.2	1.48	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-EW 29 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 6.61 ft

Reference Point: TOC

Casing Diameter: 6 in

Total Depth: 30.75 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 0920

Sample Time: ~~0958~~ 1001 Sample ID: ~~24-EW29-121813~~ 1001

QC Sample Type: — QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA -Resampled for HACH Kit Test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0930	100	6.72	17.8	4.64	0.11	6.64	-103.6	31.6	Purged 1+ system flow thru cell Vol.
0935	100	6.72	17.3	3.98	0.00	6.64	-105.0	21.4	
0940	100	6.72	17.2	3.96	0.00	6.64	-105.2	18.3	
0945	100	6.72	17.3	3.97	0.00	6.63	-106.0	16.9	
0950	100	6.72	17.3	3.96	0.00	6.63	-106.2	16.8	
0955	100	6.72	17.3	3.96	0.00	6.64	-106.3	16.0	OK To Sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 24-EW32 Date: 12/18/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: _____ Pressure: _____ PSI Recharge: _____ sec Discharge: _____ sec

WELL INFORMATION

PID Reading: 0.0 ppm

Static Depth to Water: 7.92 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 29.2 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1554

Sample Time: 1608 Sample ID: none

QC Sample Type: none QC Sample Time: _____

QC Sample ID: _____

COMMENTS: resampled for field test kits only (Fe+2)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1557	260	7.96	17.4	7068	0.16	6.85	-97.8	2.6	
1600	260	7.97	17.4	7041	0.06	6.86	-102.8	1.9	
1603	260	7.97	17.4	6998	0.03	6.86	-107.2	1.6	
1606	260	7.96	17.5	6946	0.00	6.86	-108.8	1.6	ok to sample PH

12/18/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-IW 8 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: — ppm	Sample Depth: 17.5 ft
Static Depth to Water: 7.36 ft	Purge Start Time: 1020
Reference Point: TOC	Sample Time: ~~1048~~ pd Sample ID: ~~24-IW8-121813~~ pd
Casing Diameter: 6 in	QC Sample Type: None QC Sample Time: —
Total Depth: — ft	QC Sample ID: —

COMMENTS: MNA - Resampled for HACH Kit test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1025	180	7.41	18.6	3.67	—	6.65	-128.2	12.3	purged 1+ system Vol.
1030	180	7.42	18.7	3.67	0.00	6.64	-130.9	8.41	
1035	180	7.42	18.6	3.66	0.00	6.64	-130.7	6.37	
1040	180	7.42	18.6	3.68	0.00	6.63	-132.1	4.12	
1045	180	7.42	18.6	3.68	0.00	6.63	-132.6	2.94	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-IW21 Date: 12/18/13

Sampling Personnel: TDE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 6.85 ft

Reference Point: TOC

Casing Diameter: 4 in

Total Depth: 30.72 ft

SAMPLE INFORMATION

Sample Depth: 20 ft

Purge Start Time: 1224

Sample Time: ~~1255~~ 1224 Sample ID: ~~24-IW21-121813~~ rd

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA → Resampled for HACH Kit Test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1228	160	7.05	18.5	3.34	0.00	6.89	-97.6	26.8	purged 1t system vol.
1233	100	7.28	18.5	3.31	0.00	6.89	-81.5	22.4	reduced flow to 100 mL/min
1238	100	7.35	18.6	3.25	0.00	6.89	-68.7	24.7	
1243	100	7.41	18.6	3.25	0.00	6.88	-80.8	22.1	
1248	100	7.46	18.5	3.24	0.00	6.88	-84.7	20.9	
1253	100	7.49	18.5	3.24	0.00	6.88	-86.9	21.5	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.: A111	Well ID: 24-TW-04 Date: 12/18/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: _____ Pressure: _____ PSI Recharge: _____ sec Discharge: _____ sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 20 ft
Static Depth to Water: 7.73 ft	Purge Start Time: 1625
Reference Point: TOC	Sample Time: 1706 Sample ID: none
Casing Diameter: 1 in	QC Sample Type: none QC Sample Time: _____
Total Depth: 29.4 ft	QC Sample ID: _____

COMMENTS: * Casing too small to gauge while purging
resampled for field test kits only (Fe+2)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1629	150	*	17.9	1967	0.27	7.34	-128.8	801	
1634	150	*	18.1	1592	0.02	7.30	-122.8	94.1	
1639	150	*	18.3	1527	0.00	7.29	-119.7	37.1	
1644	150	*	18.4	1511	0.00	7.28	-120.2	18.6	
1649	150	*	18.3	1515	0.00	7.27	-123.6	11.6	
1654	150	*	18.3	1514	0.00	7.25	-117.4	9.1	
1659	150	*	18.2	1521	0.02	7.26	-125.1	6.3	
1704	150	*	18.3	1518	0.00	7.24	-120.6	6.1	ok to sample PM

12/18/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-11 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: — ppm	Sample Depth: 15 ft
Static Depth to Water: 6.43 ft	Purge Start Time: 1712
Reference Point: TOC	Sample Time: ~~1737~~ 1731 Sample ID: ~~24-TW-11-121813~~
Casing Diameter: 1 in	QC Sample Type: None QC Sample Time: —
Total Depth: — ft	QC Sample ID: —

COMMENTS:

MNA → resampled for HACH kit T4+

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1715	100	—	18.9	4.10	0.00	6.51	-133.3	out of Range	purged 2+ system vol.
1720	100	—	19.0	4.12	0.00	6.52	-137.2	20.2	
1725	100	—	19.0	4.13	0.00	6.53	-139.4	20.1	
1730	100	—	19.0	4.13	0.00	6.53	-140.4	19.3	
1735	100	—	19.0	4.14	0.00	6.53	-143.8	20.4	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-14 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 7.21 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: — ft

SAMPLE INFORMATION

Sample Depth: 17 ft

Purge Start Time: 1554 pd

Sample Time: ~~1025~~ pd Sample ID: ~~24-TW-14-121813~~

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA → resampled for HACH kit test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1600	100	—	18.0	2.11	0.00	6.95	-113.1	9.38	purged 1+ system vol.
1605	100	—	18.0	2.14	0.00	6.95	-114.0	5.41	
1610	100	—	18.0	2.21	0.00	6.95	-116.3	3.71	
1615	100	—	18.0	2.24	0.00	6.95	-117.7	2.10	
1620	100	—	18.0	2.25	0.00	6.95	-118.1	2.86	OK TO SAMPLE

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-28 Date: 12/18/13

Sampling Personnel: P. Hamner

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: 3/4" bladder

Cycles per min: MN Pressure: 25 PSI Recharge: 2.0 sec Discharge: 1.0 sec

WELL INFORMATION	***SAMPLE INFORMATION***
PID Reading: 0.0 ppm	Sample Depth: 25 ft
Static Depth to Water: 8.10 ft	Purge Start Time: 1458
Reference Point: TOC	Sample Time: 1521 Sample ID: none
Casing Diameter: 1 in	QC Sample Type: none QC Sample Time:
Total Depth: ft	QC Sample ID:

COMMENTS: casing too small to gauge while pumping *
resampled for field test kit only (Fe+2)

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1506	120	*	16.0	8011	0.21	6.67	-100.3	5.0	
1509	120	*	16.1	7609	0.10	6.71	-111.1	3.6	
1512	120	*	16.1	7462	0.05	6.72	-123.1	3.2	
1515	120	*	16.1	7380	0.00	6.73	-125.4	3.4	
1518	120	*	16.1	7359	0.00	6.74	-124.8	3.5	ok to sample PH

12/18/13

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-41 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 7.90 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: — ft

SAMPLE INFORMATION

Sample Depth: 25 ft

Purge Start Time: 1515

Sample Time: 1543 Sample ID: —

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA → resampled for HACH Kit test

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1520	100	—	18.2	4.18	0.00	6.63	-111.9	14.3	purged 1+ system vol.
1525	100	—	18.2	4.29	0.00	6.62	-104.5	10.8	
1530	100	—	18.2	4.33	0.00	6.61	-96.2	9.31	
1535	100	—	18.1	4.33	0.00	6.61	-93.3	8.98	
1540	100	—	18.1	4.34	0.00	6.60	-90.5	7.02	ok to sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-47 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: Peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 6.48 ft

Reference Point: TOC

Casing Diameter: 1 in

Total Depth: — ft

SAMPLE INFORMATION

Sample Depth: 17.5 ft

Purge Start Time: 1632

Sample Time: 1700 Sample ID: ~~24-TW-47-121813~~ pd

QC Sample Type: None QC Sample Time: —

QC Sample ID: None

COMMENTS: MNA → resampled for HACH Test kit

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1636	100	—	18.7	2.33	0.00	6.58	-116.1	9.73	purged 1+ system vol.
1641	100	—	18.6	2.44	0.00	6.56	-118.1	8.14	
1646	100	—	18.7	2.49	0.00	6.55	-121.4	6.34	
1651	100	—	18.6	2.48	0.00	6.55	-123.8	4.41	
1656	100	—	18.7	2.48	0.00	6.54	-125.7	6.85	OK To Sample

TREVET

Low-Flow Purging and Sampling Log	Project: NAVSTA TI Job No.:	Well ID: 24-TW-48 Date: 12/18/13

Sampling Personnel: DE

Stabilization Criteria: three consecutive readings measured every 3-5 min.: ±0.1 pH; ±3% conductivity; ±10% turbidity (if > 10 NTUs); ±0.3 mg/L DO; ±10 mV ORP; ±1 °C temp; flow rate of 100-500 ml/min; water level drawdown < 0.3 ft

If stabilization is not occurring and the procedure has been strictly followed, then sample collection can take place once three (minimum) to six (maximum) casing volumes have been removed.

PUMP IFORMATION Pump Type: peristaltic

Cycles per min: — Pressure: — PSI Recharge: — sec Discharge: — sec

WELL INFORMATION

PID Reading: — ppm

Static Depth to Water: 6.75 ft

Reference Point: TOC

Casing Diameter: 1/2 in

Total Depth: — ft

SAMPLE INFORMATION

Sample Depth: 16 ft

Purge Start Time: 1420

Sample Time: 1450 Sample ID: ~~24-TW-48-121813~~ PM

QC Sample Type: None QC Sample Time: —

QC Sample ID: —

COMMENTS: MNA → Resampled for Hach Kit Test.

PURGE LOG			***WATER QUALITY PARAMETERS***						
Time of Reading	Flow Rate (ml/min)	GW Depth (ft)	Temp. (°C)	Cond. (mS/cm)	DO (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1425	100	—	18.8	3.22	2.90	6.55	-116.5	22.3	purged 1x system vol.
1430	100	—	18.9	3.13	0.00	6.56	-122.6	20.9	
1435	100	—	18.8	3.13	0.00	6.56	-126.1	19.3	
1440	100	—	18.9	3.12	0.00	6.55	-128.6	18.7	
1445	100	—	18.8	3.13	0.00	6.54	-129.5	20.1	OK TO Sample

TREVET

Appendix B: Wastewater Discharge Permit

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San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Wastewater Enterprise
Collection System Division

3801 Third Street, Suite 600
San Francisco, CA 94124
Telephone: (415) 695-7310
Fax: (415) 695-7388
www.sfwater.org

August 15, 2012

Mr. Greg Alyanakian, Principal
G2RJ Trevet, Inc.
9888 Carroll Centre Rd., Sutie 228
San Diego, CA 92126

SUBJECT: Wastewater Discharge Permit Renewal. Treasure Island Groundwater, Monitoring Well Purge Water, IRP Sites 6, 12, 21, and 24

Dear Mr.Alyanakian:

We have reviewed your application (Aug. 13, 2012) for a batch discharge permit for wastewater generated as a result of groundwater monitoring activities at the former Treasure Island Naval Air Station, IRP Site 6 and 12, as noted on the enclosed maps (Figures 2—5).

Chemical test results for sample "071712-IDWtank-01", sample date 7-17-12 (EMAX Lab; Torrance, CA; batch # 12G132 [8/7/12]) indicates little or no risk of interference, and no risk of violating the NPDES permit for San Francisco's wastewater treatment plant at Treasure Island (RWQCB Order No. R2-2004-0036).

Permission is hereby granted to G2RJ Trevet, Inc. ("Permittee") to discharge up to 12,000 gallons of water (or until December 31, 2016, whichever comes first) from the above-referenced monitoring wells to the wet well attached to Pump Station 32 at the intersection of Avenue M and California Avenue, Treasure Island, San Francisco, CA (Figure 6), pursuant to Sections 120, 124, and 125, Chapter X (Public Works Code) of Part II, San Francisco Municipal Code, Article 4.1.

Discharges by the Permittee shall be in compliance with:

(1) The requirements of Article 4.1 and amendments thereto, as well as the City's Department of Public Works' Order No. 158170;

(2) The U.S. Environmental Protection Agency regulations (40 CFR Part 403); and applicable pretreatment regulations and standards required under local, state, and federal law.

By acceptance of this permit, the Permittee agrees:

1. To indemnify and hold harmless the City from any and all costs, claims, damages, fines, remediation costs, losses or other expenses arising from the Permittee's discharges;

Edwin M. Lee
Mayor

Anson Moran
President

Art Torres
Vice President

Ann Moller Caen
Commissioner

Francesca Vietor
Commissioner

Vince Courtney
Commissioner

Ed Harrington
General Manager

2. To pay to the City an amount equal to the costs, penalties and other incidental fees and expenses associated with the remediation of any obstruction, damage or impairment to the sewer system, or for additional incidental monitoring of the permittee's discharge, if required;

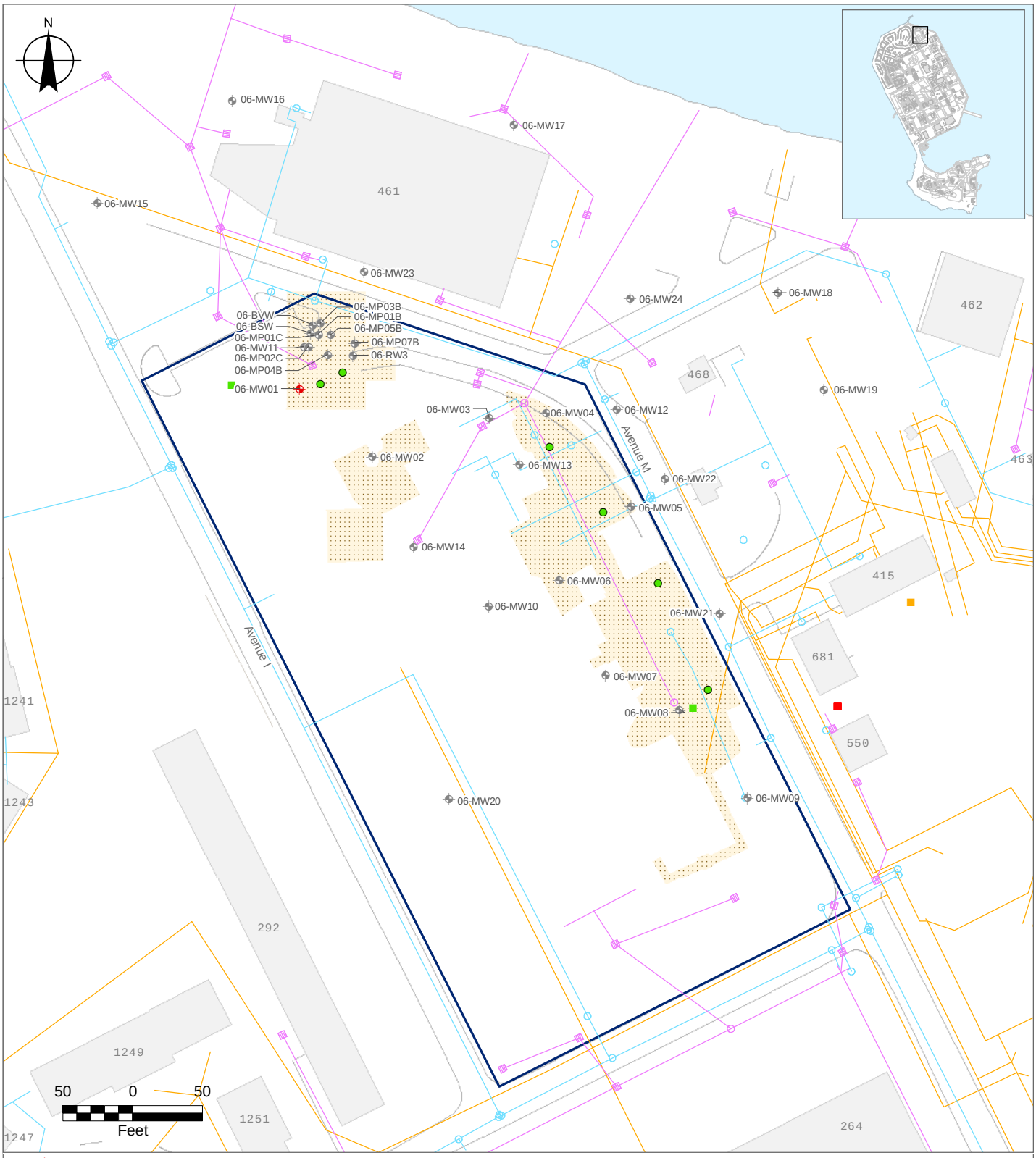
3. To sample, retest, and notify this office should significant changes in water quality be observed or suspected over the life of this permit.

This permit expires on December 31, 2016. If you have any questions, please contact Dr. John Gregson at (415) 695-7358.

Sincerely,

Bruce Seale, Acting Manager
Pretreatment Program
Wastewater Enterprise / Collection System Division

cc: Carla Godfrey, Chief
North Bayside Operations



Monitoring Well

Abandoned / Destroyed Well

Stormwater Line

Fresh Water Line

Sanitary Sewer Line

Petroleum Site 6 Boundary

Excavation Area

Building

Aboveground Storage Tanks (AST) & Underground Storage Tanks (UST)

Removed AST

Previously Suspected UST

Suspected Removed UST

Closed-In-Place UST

Removed UST

Road Curb

Source: GSW Sullivan 2006

Naval Station Treasure Island

Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 2

SITE 6 GROUNDWATER MONITORING WELL LOCATIONS

Sampling and Analysis Plan

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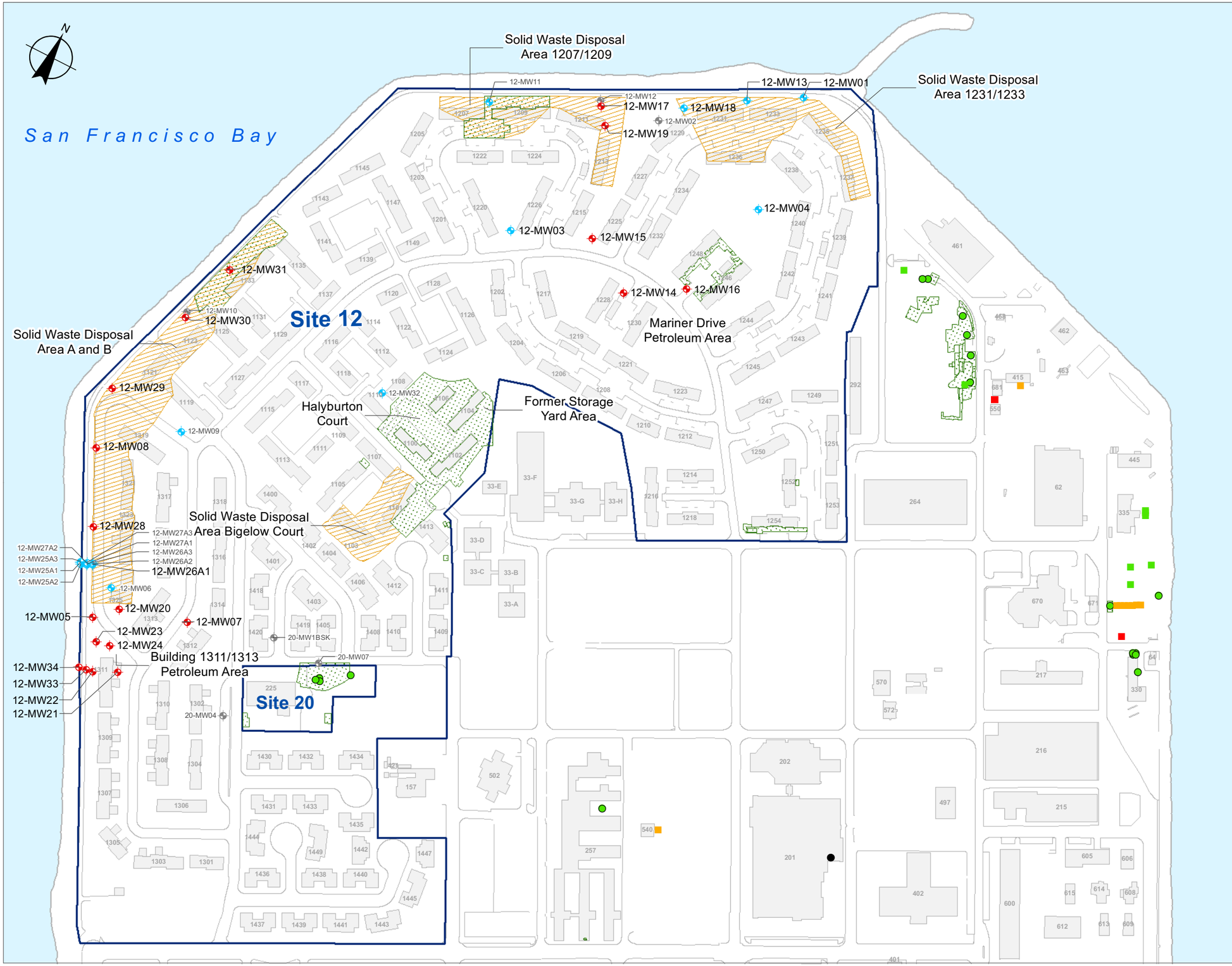

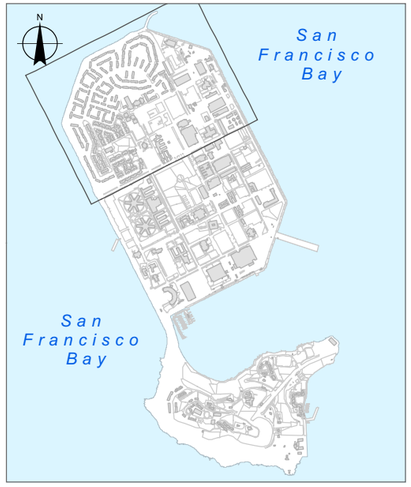

Well Locations

- Monitoring Well
- Remediation Well
- Piezometer / Inactive Well
- Abandoned / Destroyed Well

Above- and Underground Storage Tanks

- Active AST
- Inactive AST
- Suspected Removed AST
- Removed AST
- Inactive UST
- Previously Suspected UST
- Suspected Removed UST
- Closed-In-Place UST
- Removed UST
- US Coast Guard UST
- Site 12 Boundary
- Solid Waste Disposal Area
- Excavation Area
- Building
- Road Curb

Note:
Wells with grey ID labels are not used in the Site 12 investigation.

Source: GSR Sullivan 2006

150 0 150 300
Feet

Naval Station Treasure Island
Department of the Navy, BRAC PMO West, San Diego, California

FIGURE 3

SITE 12 GROUNDWATER MONITORING WELL LOCATIONS

Sampling and Analysis Plan

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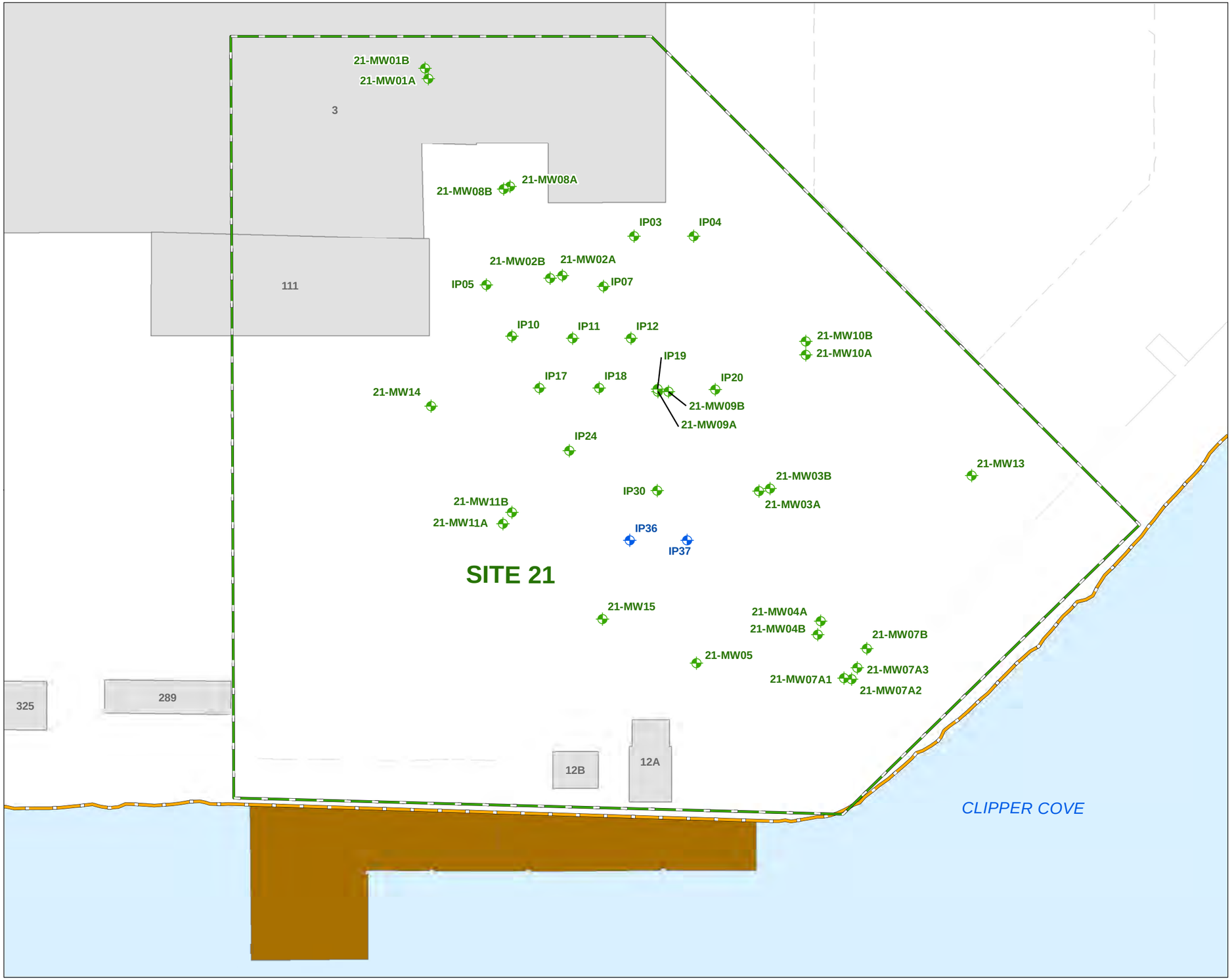

LEGEND

- 21-MW15 — WELLS PROPOSED FOR QUARTERLY GROUNDWATER SAMPLING
- IP-37 — WELLS PROPOSED AS ALTERNATIVE FOR QUARTERLY GROUNDWATER SAMPLING
- NAVAL STATION TREASURE ISLAND BOUNDARY
- SITE 21 BOUNDARY
- BUILDING/STRUCTURE

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 INCH = 40 FEET

DEPARTMENT OF THE NAVY — SAN DIEGO, CALIFORNIA

NAVFAC SOUTHWEST

SAMPLING AND ANALYSIS PLAN FOR SITES 21 AND 24
NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

FIGURE 4

GROUNDWATER MONITORING
WELL LOCATION MAP - SITE 21

TREVET

DATE: JUNE 2012

CONTRACT NO.: N62473-11-C-5011

Path: N:\GIS_Projects\TreasureIsland\Figs_SAP_24n24_6-12\Fig2_21_MWN_SAP_6-12.mxd

Date: 6/5/2012

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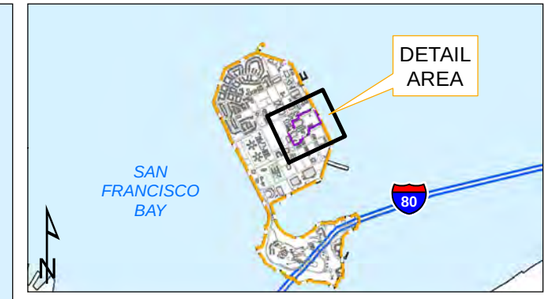

LEGEND

- TW-46 — WELLS PROPOSED FOR QUARTERLY GROUNDWATER SAMPLING
- TW-42 — WELLS PROPOSED FOR 1ST AND 3RD QUARTER GROUNDWATER SAMPLING
- TW-44 — WELLS PROPOSED FOR 2ND AND 4TH QUARTERLY GROUNDWATER SAMPLING
- NAVAL STATION TREASURE ISLAND BOUNDARY
- SITE 24 BOUNDARY
- BUILDING/STRUCTURE

GRAPHIC SCALE

0 75 150 300

(IN FEET)
1 INCH = 150 FEET

DEPARTMENT OF THE NAVY — SAN DIEGO, CALIFORNIA

NAVFAC SOUTHWEST

SAMPLING AND ANALYSIS PLAN FOR SITES 21 AND 24
NAVAL STATION TREASURE ISLAND
SAN FRANCISCO, CALIFORNIA

FIGURE 5

GROUNDWATER MONITORING
WELL LOCATION MAP - SITE 24

TREVET

DATE: JUNE 2012

CONTRACT NO.: N62473-11-C-5011

Path: N:\GIS_Projects\TreasureIsland\Figs_SAP_24\24_6-12\Fig3_24_MWN_SAP_6-12.mxd

Date: 6/5/2012

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Google earth

feet 2000

meters 700

FIGURE 6

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Appendix C: Laboratory Analytical and Data Validation Reports

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METHOD 300.0
CHLORIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13C076

Matrix : WATER
Instrument ID : D7

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICC010WQ	ND	1	NA	0.200	0.100	03/14/1315:36	NA	AC08-10	AC08-01	ICC010W	NA	NA
LCS1W	ICC010WL	1.92	1	NA	0.200	0.100	03/14/1312:44	NA	AC08-04	AC08-01	ICC010W	NA	NA
LCD1W	ICC010WC	1.97	1	NA	0.200	0.100	03/14/1313:12	NA	AC08-05	AC08-01	ICC010W	NA	NA
IR06-031313-25DL	C076-03I	17.9	5	NA	1.00	0.500	03/14/1314:10	NA	AC08-07	AC08-01	ICC010W	03/13/1312:10	03/14/13
IR06-031313-SB	C076-04	0.123J	1	NA	0.200	0.100	03/14/1314:39	NA	AC08-08	AC08-01	ICC010W	03/13/1313:20	03/14/13
IR06-031313-ER	C076-05	0.129J	1	NA	0.200	0.100	03/14/1315:08	NA	AC08-09	AC08-01	ICC010W	03/13/1313:40	03/14/13
IR06-031313-26DL	C076-02J	76.5	20	NA	4.00	2.00	03/14/1316:43	NA	AC08-12	AC08-01	ICC010W	03/13/1311:05	03/14/13

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13C076

Matrix : WATER
Instrument ID : D7

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICC010WQ	ND	1	NA	0.500	0.200	03/14/1315:36	NA	AC08-10	AC08-01	ICC010W	NA	NA
LCS1W	ICC010WL	4.82	1	NA	0.500	0.200	03/14/1312:44	NA	AC08-04	AC08-01	ICC010W	NA	NA
LCD1W	ICC010WC	4.96	1	NA	0.500	0.200	03/14/1313:12	NA	AC08-05	AC08-01	ICC010W	NA	NA
IR06-031313-25DL	C076-03I	19.3	5	NA	2.50	1.00	03/14/1314:10	NA	AC08-07	AC08-01	ICC010W	03/13/1312:10	03/14/13
IR06-031313-SB	C076-04	ND	1	NA	0.500	0.200	03/14/1314:39	NA	AC08-08	AC08-01	ICC010W	03/13/1313:20	03/14/13
IR06-031313-ER	C076-05	ND	1	NA	0.500	0.200	03/14/1315:08	NA	AC08-09	AC08-01	ICC010W	03/13/1313:40	03/14/13
IR06-031313-26DL	C076-02J	27.9	20	NA	10.0	4.00	03/14/1316:43	NA	AC08-12	AC08-01	ICC010W	03/13/1311:05	03/14/13

METHOD 353.3
NITRATE-N

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13C076

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAC004WB	ND	1	NA	.1	.02	03/26/1315:07	NA	13NAC00410	13NAC004	NAC004W	NA	NA
LCS1W	NAC004WL	0.497	1	NA	.1	.02	03/26/1315:07	NA	13NAC00411	13NAC004	NAC004W	NA	NA
LCD1W	NAC004WC	0.492	1	NA	.1	.02	03/26/1315:08	NA	13NAC00412	13NAC004	NAC004W	NA	NA
IR06-031313-26	C076-02	ND	1	NA	.1	.02	03/26/1315:08	NA	13NAC00413	13NAC004	NAC004W	03/13/1311:05	03/14/13
IR06-031313-26DUP	C076-02D	ND	1	NA	.1	.02	03/26/1315:08	NA	13NAC00414	13NAC004	NAC004W	03/13/1311:05	03/14/13
IR06-031313-26MS	C076-02M	0.505	1	NA	.1	.02	03/26/1315:08	NA	13NAC00415	13NAC004	NAC004W	03/13/1311:05	03/14/13
IR06-031313-25	C076-03	ND	1	NA	.1	.02	03/26/1315:09	NA	13NAC00416	13NAC004	NAC004W	03/13/1312:10	03/14/13
IR06-031313-SB	C076-04	0.0702J	1	NA	.1	.02	03/26/1315:09	NA	13NAC00417	13NAC004	NAC004W	03/13/1313:20	03/14/13
IR06-031313-ER	C076-05	0.0728J	1	NA	.1	.02	03/26/1315:10	NA	13NAC00418	13NAC004	NAC004W	03/13/1313:40	03/14/13

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 12:15
Sample ID: IR06-031313-26	Date Analyzed: 03/20/13 14:04
Lab Samp ID: C076-02	Dilution Factor: 1
Lab File ID: LC20008A	Matrix : WATER
Ext Btch ID: DSC011W	% Moisture : NA
Calib. Ref.: LC20003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	895	1000	89.5	50-130
HEXACOSANE	257	250.0	103	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 12:15
Sample ID: IR06-031313-25	Date Analyzed: 03/20/13 14:21
Lab Samp ID: C076-03	Dilution Factor: 1.01
Lab File ID: LC20009A	Matrix : WATER
Ext Btch ID: DSC011W	% Moisture : NA
Calib. Ref.: LC20003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	270	100	50
MOTOR OIL	ND	510	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	875	1010	86.6	50-130
HEXACOSANE	245	252.5	97.1	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 12:15
Sample ID: IR06-031313-SB	Date Analyzed: 03/20/13 14:38
Lab Samp ID: C076-04	Dilution Factor: 0.98
Lab File ID: LC20010A	Matrix : WATER
Ext Btch ID: DSC011W	% Moisture : NA
Calib. Ref.: LC20003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	98	49
MOTOR OIL	ND	490	49

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	817	980.0	83.4	50-130
HEXACOSANE	234	245.0	95.7	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 12:15
Sample ID: IR06-031313-ER	Date Analyzed: 03/20/13 14:55
Lab Samp ID: C076-05	Dilution Factor: 1.02
Lab File ID: LC20011A	Matrix : WATER
Ext Btch ID: DSC011W	% Moisture : NA
Calib. Ref.: LC20003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	51
MOTOR OIL	ND	510	51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	877	1020	86.0	50-130
HEXACOSANE	250	255.0	98.2	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 03/19/13
Batch No. : 13C076	Date Extracted: 03/19/13 12:15
Sample ID: MBLK1W	Date Analyzed: 03/20/13 13:14
Lab Samp ID: DSC011WB	Dilution Factor: 1
Lab File ID: LC20005A	Matrix : WATER
Ext Btch ID: DSC011W	% Moisture : NA
Calib. Ref.: LC20003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	851	1000	85.1	50-140
HEXACOSANE	243	250.0	97.0	70-150

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13C076
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSC011WB	DSC011WL	DSC011WC		
LAB FILE ID:	LC20005A	LC20006A	LC20007A		
DATE EXTRACTED:	03/19/1312:15	03/19/1312:15	03/19/1312:15	DATE COLLECTED:	NA
DATE ANALYZED:	03/20/1313:14	03/20/1313:31	03/20/1313:48	DATE RECEIVED:	03/19/13
PREP. BATCH:	DSC011W	DSC011W	DSC011W		
CALIB. REF:	LC20003A	LC20003A	LC20003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4360	87	5000	4470	89	2	70-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	976	98	1000	930	93	50-140
Hexacosane	250	261	104	250	254	102	70-150

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 00:27
Sample ID: IR6-031313-TB1	Date Analyzed: 03/19/13 00:27
Lab Samp ID: C076-01	Dilution Factor: 1
Lab File ID: EC18021A	Matrix : WATER
Ext Btch ID: VG39C06	% Moisture : NA
Calib. Ref.: EC18015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	39.0	40.00	97.5	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/19/13 01:10
Sample ID: IR06-031313-26	Date Analyzed: 03/19/13 01:10
Lab Samp ID: C076-02	Dilution Factor: 1
Lab File ID: EC18022A	Matrix : WATER
Ext Btch ID: VG39C06	% Moisture : NA
Calib. Ref.: EC18015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	38.9	40.00	97.3	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	03/13/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	03/14/13
Batch No.	: 13C076	Date Extracted:	03/19/13 01:54
Sample ID:	IR06-031313-25	Date Analyzed:	03/19/13 01:54
Lab Samp ID:	C076-03	Dilution Factor:	1
Lab File ID:	EC18023A	Matrix	: WATER
Ext Btch ID:	VG39C06	% Moisture	: NA
Calib. Ref.:	EC18015A	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	1100	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	42.1	40.00	105	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	03/13/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	03/14/13
Batch No.	: 13C076	Date Extracted:	03/19/13 03:21
Sample ID:	IR06-031313-ER	Date Analyzed:	03/19/13 03:21
Lab Samp ID:	C076-05	Dilution Factor:	1
Lab File ID:	EC18025A	Matrix :	WATER
Ext Btch ID:	VG39C06	% Moisture :	NA
Calib. Ref.:	EC18015A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	38.2	40.00	95.4	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	03/13/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	03/14/13
Batch No.	: 13C076	Date Extracted:	03/19/13 10:06
Sample ID:	IR06-031313-SB	Date Analyzed:	03/19/13 10:06
Lab Samp ID:	C076-04R	Dilution Factor:	1
Lab File ID:	EC18030A	Matrix	: WATER
Ext Btch ID:	VG39C06	% Moisture	: NA
Calib. Ref.:	EC18026A	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	35.0	40.00	87.4	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 03/18/13
Batch No. : 13C076	Date Extracted: 03/18/13 23:00
Sample ID: MBLK1W	Date Analyzed: 03/18/13 23:00
Lab Samp ID: VG39C06B	Dilution Factor: 1
Lab File ID: EC18019A	Matrix : WATER
Ext Btch ID: VG39C06	% Moisture : NA
Calib. Ref.: EC18015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	36.1	40.00	90.4	70-130

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13C076
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39C06B	VG39C06L	VG39C06C		
LAB FILE ID:	EC18019A	EC18016A	EC18017A		
DATE EXTRACTED:	03/18/1323:00	03/18/1320:51	03/18/1321:34	DATE COLLECTED:	NA
DATE ANALYZED:	03/18/1323:00	03/18/1320:51	03/18/1321:34	DATE RECEIVED:	03/18/13
PREP. BATCH:	VG39C06	VG39C06	VG39C06		
CALIB. REF:	EC18015A	EC18015A	EC18015A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	431	86	500	413	83	4	60-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	42.5	106	40.0	43.7	109	70-130

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-26	Date Analyzed: 03/18/13 13:15
Lab Samp ID: C076-02	Dilution Factor: 1
Lab File ID: FC18016A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	110E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-25	Date Analyzed: 03/18/13 13:52
Lab Samp ID: C076-03	Dilution Factor: 1
Lab File ID: FC18019A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	94E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-SB	Date Analyzed: 03/18/13 14:18
Lab Samp ID: C076-04	Dilution Factor: 1
Lab File ID: FC18021A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-ER	Date Analyzed: 03/18/13 14:45
Lab Samp ID: C076-05	Dilution Factor: 1
Lab File ID: FC18023A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-26DL	Date Analyzed: 03/18/13 13:40
Lab Samp ID: C076-02I	Dilution Factor: 10
Lab File ID: FC18018A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	50	6.4
ETHENE	ND	50	6.0
METHANE	230	50	3.4

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-25DL	Date Analyzed: 03/18/13 14:31
Lab Samp ID: C076-03I	Dilution Factor: 100
Lab File ID: FC18022A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	500	64
ETHENE	ND	500	60
METHANE	1000	500	34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 03/13/13
Project : TREASURE ISLAND IR 6&12	Date Received: 03/14/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: IR06-031313-26	Date Analyzed: 03/18/13 13:15 # 03/18/13 13:40
Lab Samp ID: C076-02 #C076-02I	Dilution Factor: 1 # 10
Lab File ID: FC18016A #FC18018A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18015A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	230	50	3.4

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected	: 03/13/13
Project	: TREASURE ISLAND IR 6&12	Date Received	: 03/14/13
Batch No.	: 13C076	Date Extracted	: 03/18/13 09:50
Sample ID	: IR06-031313-25	Date Analyzed	: 03/18/13 13:52 # 03/18/13 14:31
Lab Samp ID	: C076-03 #C076-03I	Dilution Factor	: 1 # 100
Lab File ID	: FC18019A #FC18022A	Matrix	: WATER
Ext Btch ID	: DGC004W	% Moisture	: NA
Calib. Ref.	: FC18015A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	1000	500	34

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 03/18/13
Batch No. : 13C076	Date Extracted: 03/18/13 09:50
Sample ID: MBLK1W	Date Analyzed: 03/18/13 10:38
Lab Samp ID: DGC004WB	Dilution Factor: 1
Lab File ID: FC18003A	Matrix : WATER
Ext Btch ID: DGC004W	% Moisture : NA
Calib. Ref.: FC18002A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13C076
METHOD: METHOD RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGC004WB	DGC004WL	DGC004WC		
LAB FILE ID:	FC18003A	FC18004A	FC18005A		
DATE EXTRACTED:	03/18/1309:50	03/18/1309:50	03/18/1309:50	DATE COLLECTED:	NA
DATE ANALYZED:	03/18/1310:38	03/18/1310:51	03/18/1311:03	DATE RECEIVED:	03/18/13
PREP. BATCH:	DGC004W	DGC004W	DGC004W		
CALIB. REF:	FC18002A	FC18002A	FC18002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	24.3	96	25.4	24.2	95	1	70-140	30
Ethene	ND	23.7	23.0	97	23.7	22.9	97	1	70-140	30
Methane	ND	13.6	12.8	94	13.6	12.8	94	0	70-130	30

METHOD 376.1
SULFIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13C076

Matrix : WATER
InstrumentID : MG/L

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SDC001WB	ND	1	NA	1	1	03/18/1314:05	NA	13SDC001W01	13SDC001	SDC001W	NA	NA
LCS1W	SDC001WL	2.16	1	NA	1	1	03/18/1314:20	NA	13SDC001W02	13SDC001	SDC001W	NA	NA
LCD1W	SDC001WC	2.13	1	NA	1	1	03/18/1314:24	NA	13SDC001W03	13SDC001	SDC001W	NA	NA
IR06-031313-26	C076-02	ND	1	NA	1	1	03/18/1314:29	NA	13SDC001W04	13SDC001	SDC001W	03/13/1311:05	03/14/13
IR06-031313-25	C076-03	ND	1	NA	1	1	03/18/1314:34	NA	13SDC001W05	13SDC001	SDC001W	03/13/1312:10	03/14/13
IR06-031313-SB	C076-04	ND	1	NA	1	1	03/18/1314:38	NA	13SDC001W06	13SDC001	SDC001W	03/13/1313:20	03/14/13
IR06-031313-ER	C076-05	ND	1	NA	1	1	03/18/1314:42	NA	13SDC001W07	13SDC001	SDC001W	03/13/1313:40	03/14/13

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 17:40
Sample ID: IR6-041613-TB1	Date Analyzed: 04/17/13 17:40
Lab Samp ID: D084-01	Dilution Factor: 1
Lab File ID: RDC229	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYLBENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.64	10.00	96.4	70-140
4-BROMOFLUOROBENZENE	9.01	10.00	90.1	70-130
TOLUENE-D8	9.94	10.00	99.4	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 18:41
Sample ID: IR6-041613-25	Date Analyzed: 04/17/13 18:41
Lab Samp ID: D084-02	Dilution Factor: 1
Lab File ID: RDC231	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	11	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	84E	2.0	0.20
ISOPROPYLBENZENE	8.6	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	28	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	120E	2.0	0.40
O-XYLENE	48	0.50	0.20
XYLENES (TOTAL)	170E	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.7	10.00	117	70-140
4-BROMOFLUOROBENZENE	9.56	10.00	95.6	70-130
TOLUENE-D8	9.88	10.00	98.8	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 19:12
Sample ID: IR6-041613-26	Date Analyzed: 04/17/13 19:12
Lab Samp ID: D084-03	Dilution Factor: 1
Lab File ID: RDC232	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	2.2	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	8.6	2.0	0.20
ISOPROPYLBENZENE	3.2	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	6.1	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	4.2	2.0	0.40
O-XYLENE	0.87	0.50	0.20
XYLENES (TOTAL)	5.0	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-140
4-BROMOFLUOROBENZENE	8.62	10.00	86.2	70-130
TOLUENE-D8	9.76	10.00	97.6	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 19:42
Sample ID: IR6-041613-SB	Date Analyzed: 04/17/13 19:42
Lab Samp ID: D084-04	Dilution Factor: 1
Lab File ID: RDC233	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYLBENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-140
4-BROMOFLUOROBENZENE	8.85	10.00	88.5	70-130
TOLUENE-D8	9.96	10.00	99.6	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 20:12
Sample ID: IR6-041613-ER	Date Analyzed: 04/17/13 20:12
Lab Samp ID: D084-05	Dilution Factor: 1
Lab File ID: RDC234	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYLBENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.90	10.00	99.0	70-140
4-BROMOFLUOROBENZENE	9.33	10.00	93.3	70-130
TOLUENE-D8	10.3	10.00	103	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 04/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/18/13 13:02
Sample ID: IR6-041613-25DL	Date Analyzed: 04/18/13 13:02
Lab Samp ID: D084-02T	Dilution Factor: 10
Lab File ID: RDC247	Matrix : WATER
Ext Btch ID: VO67D12	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	2.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	2.0
1,1,2-TRICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHENE	ND	5.0	2.0
1,2,3-TRICHLOROBENZENE	ND	20	3.0
1,2,4-TRICHLOROBENZENE	ND	20	3.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	20	5.0
1,2-DICHLOROBENZENE	ND	5.0	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
1,2-DICHLOROPROPANE	ND	20	2.0
1,3-DICHLOROBENZENE	ND	5.0	2.0
1,4-DICHLOROBENZENE	ND	5.0	2.0
2-BUTANONE	ND	100	40
2-HEXANONE	ND	100	40
4-METHYL-2-PENTANONE	ND	200	40
ACETONE	ND	100	50
BENZENE	9.9	5.0	2.0
BROMOCHLOROMETHANE	ND	5.0	2.0
BROMODICHLOROMETHANE	ND	5.0	2.0
BROMOFORM	ND	10	3.0
BROMOMETHANE	ND	10	3.0
CARBON DISULFIDE	ND	5.0	2.0
CARBON TETRACHLORIDE	ND	5.0	2.0
CHLOROBENZENE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	3.0
CHLOROFORM	ND	5.0	2.0
CHLOROMETHANE	ND	5.0	3.0
CIS-1,2-DICHLOROETHENE	ND	5.0	2.0
CIS-1,3-DICHLOROPROPENE	ND	5.0	2.0
DIBROMOCHLOROMETHANE	ND	5.0	2.0
ETHYLBENZENE	76	20	2.0
ISOPROPYLBENZENE	7.8J	20	2.0
METHYL TERT-BUTYL ETHER	ND	5.0	2.0
METHYLENE CHLORIDE	ND	20	5.0
STYRENE	ND	5.0	2.0
TETRACHLOROETHENE	ND	5.0	2.0
TOLUENE	25	5.0	2.0
TRANS-1,2-DICHLOROETHENE	ND	5.0	2.0
TRANS-1,3-DICHLOROPROPENE	ND	5.0	2.0
TRICHLOROETHENE	ND	5.0	2.0
VINYL ACETATE	ND	10	5.0
VINYL CHLORIDE	ND	5.0	2.0
M- AND P-XYLENE	120	20	4.0
O-XYLENE	42	5.0	2.0
XYLENES (TOTAL)	160	20	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97.4	100.0	97.4	70-140
4-BROMOFLUOROBENZENE	88.6	100.0	88.6	70-130
TOLUENE-D8	98.1	100.0	98.1	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	04/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	04/17/13
Batch No.	: 13D084	Date Extracted:	04/17/13 18:41 # 04/18/13 13:02
Sample ID:	IR6-041613-25	Date Analyzed:	04/17/13 18:41 # 04/18/13 13:02
Lab Samp ID:	D084-02 #D084-02T	Dilution Factor:	1 # 10
Lab File ID:	RDC231 #RDC247	Matrix	: WATER
Ext Btch ID:	VO67D11 #VO67D12	% Moisture	: NA
Calib. Ref.:	RDC019 #RDC019	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	11	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
# ETHYLBENZENE	76	20	2.0
ISOPROPYLBENZENE	8.6	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	28	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
# M- AND P-XYLENE	120	20	4.0
O-XYLENE	48	0.50	0.20
# XYLENES (TOTAL)	160	20	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.7	10.00	117	70-140
4-BROMOFLUOROBENZENE	9.56	10.00	95.6	70-130
TOLUENE-D8	9.88	10.00	98.8	70-140
# 1,2-DICHLOROETHANE-D4	97.4	100.0	97.4	70-140
# 4-BROMOFLUOROBENZENE	88.6	100.0	88.6	70-130
# TOLUENE-D8	98.1	100.0	98.1	70-140

Members of the Associated File

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	04/18/13
Batch No.	: 13D084	Date Extracted:	04/18/13 12:30
Sample ID:	MBLK2W	Date Analyzed:	04/18/13 12:30
Lab Samp ID:	VO67D12B	Dilution Factor:	1
Lab File ID:	RDC246	Matrix	: WATER
Ext Btch ID:	VO67D12	% Moisture	: NA
Calib. Ref.:	RDC019	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYLBENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	0.50J	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.65	10.00	96.5	70-140
4-BROMOFLUOROBENZENE	8.98	10.00	89.8	70-130
TOLUENE-D8	9.87	10.00	98.7	70-130

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 04/17/13
Batch No. : 13D084	Date Extracted: 04/17/13 14:34
Sample ID: MBLK1W	Date Analyzed: 04/17/13 14:34
Lab Samp ID: VO67D11Q	Dilution Factor: 1
Lab File ID: RDC223	Matrix : WATER
Ext Btch ID: VO67D11	% Moisture : NA
Calib. Ref.: RDC019	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYLBENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	0.56J	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.59	10.00	95.9	70-140
4-BROMOFLUOROBENZENE	9.19	10.00	91.9	70-130
TOLUENE-D8	10.1	10.00	101	70-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13D084
METHOD: METHOD 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO67D11Q	VO67D11L	VO67D11C		
LAB FILE ID:	RDC223	RDC219	RDC220		
DATE EXTRACTED:	04/17/1314:34	04/17/1312:30	04/17/1312:58	DATE COLLECTED:	NA
DATE ANALYZED:	04/17/1314:34	04/17/1312:30	04/17/1312:58	DATE RECEIVED:	04/17/13
PREP. BATCH:	VO67D11	VO67D11	VO67D11		
CALIB. REF:	RDC019	RDC019	RDC019		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.62	96	10.0	9.06	91	6	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	8.83	88	10.0	8.69	87	2	70-130	30
1,1,2-Trichloroethane	ND	10.0	9.43	94	10.0	8.98	90	5	70-130	30
1,1-Dichloroethane	ND	10.0	9.70	97	10.0	9.12	91	6	70-130	30
1,1-Dichloroethene	ND	10.0	9.17	92	10.0	8.41	84	9	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.4	104	10.0	9.56	96	9	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	11.3	113	10.0	10.2	102	10	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.6	106	10.0	9.55	96	11	60-130	30
1,2-Dichlorobenzene	ND	10.0	9.48	95	10.0	8.93	89	6	70-130	30
1,2-Dichloroethane	ND	10.0	9.85	98	10.0	9.40	94	5	70-130	30
1,2-Dichloropropane	ND	10.0	9.66	97	10.0	9.18	92	5	70-130	30
1,3-Dichlorobenzene	ND	10.0	8.98	90	10.0	8.61	86	4	70-130	30
1,4-Dichlorobenzene	ND	10.0	8.99	90	10.0	8.60	86	4	70-130	30
2-Butanone	ND	50.0	50.9	102	50.0	47.8	96	6	60-140	30
2-Hexanone	ND	50.0	53.1	106	50.0	49.3	99	7	70-140	30
4-Methyl-2-Pentanone	ND	50.0	50.6	101	50.0	47.7	95	6	60-140	30
Acetone	ND	50.0	55.8	112	50.0	52.9	106	5	50-150	30
Benzene	ND	10.0	9.35	93	10.0	8.89	89	5	70-130	30
Bromochloromethane	ND	10.0	9.56	96	10.0	9.01	90	6	70-130	30
Bromodichloromethane	ND	10.0	9.50	95	10.0	8.90	89	6	70-130	30
Bromoform	ND	10.0	8.94	89	10.0	8.80	88	2	60-140	30
Bromomethane	ND	10.0	8.11	81	10.0	7.13	71	13	50-140	30
Carbon Disulfide	ND	10.0	10.8	108	10.0	9.93	99	8	50-140	30
Carbon Tetrachloride	ND	10.0	9.54	95	10.0	8.93	89	7	70-130	30
Chlorobenzene	ND	10.0	9.52	95	10.0	9.00	90	6	70-130	30
Chloroethane	ND	10.0	8.84	88	10.0	7.66	77	14	70-140	30
Chloroform	ND	10.0	10.1	101	10.0	9.50	95	6	70-130	30
Chloromethane	ND	10.0	8.26	83	10.0	7.30	73	12	60-130	30
cis-1,2-Dichloroethene	ND	10.0	8.62	86	10.0	8.12	81	6	70-130	30
cis-1,3-Dichloropropene	ND	10.0	9.49	95	10.0	8.91	89	6	70-130	30
Dibromochloromethane	ND	10.0	9.36	94	10.0	8.98	90	4	70-130	30
Ethylbenzene	ND	10.0	9.52	95	10.0	8.82	88	8	70-130	30
IsopropylBenzene	ND	10.0	10.3	103	10.0	9.53	95	8	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	9.43	94	10.0	8.93	89	5	70-140	30
Methylene Chloride	0.560J	10.0	9.10	91	10.0	8.54	84	6	70-130	30
Styrene	ND	10.0	9.69	97	10.0	8.99	90	7	70-130	30
Tetrachloroethene	ND	10.0	9.38	94	10.0	8.88	89	5	70-130	30
Toluene	ND	10.0	9.42	94	10.0	8.75	88	7	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	8.77	88	10.0	8.34	83	5	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	9.54	95	10.0	8.97	90	6	70-140	30
Trichloroethene	ND	10.0	9.58	96	10.0	9.02	90	6	70-130	30
Vinyl Acetate	ND	10.0	7.91	79	10.0	7.24	72	9	20-160	30
Vinyl Chloride	ND	10.0	9.70	97	10.0	8.48	85	13	60-150	30
m- and p-Xylene	ND	20.0	19.1	95	20.0	18.0	90	6	70-130	30
o-Xylene	ND	10.0	9.30	93	10.0	8.75	88	6	70-130	30
Xylenes (Total)	ND	30.0	28.4	95	30.0	26.8	89	6	70-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.69	97	10.0	9.93	99	70-140
4-Bromofluorobenzene	10.0	8.84	88	10.0	9.19	92	70-130
Toluene-d8	10.0	9.95	99	10.0	9.89	99	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13D084
METHOD: METHOD 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	VO67D12B	VO67D12L	VO67D12C		
LAB FILE ID:	RDC246	RDC243	RDC244		
DATE EXTRACTED:	04/18/1312:30	04/18/1310:57	04/18/1311:28	DATE COLLECTED:	NA
DATE ANALYZED:	04/18/1312:30	04/18/1310:57	04/18/1311:28	DATE RECEIVED:	04/18/13
PREP. BATCH:	VO67D12	VO67D12	VO67D12		
CALIB. REF:	RDC019	RDC019	RDC019		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.53	95	10.0	9.15	92	4	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	8.76	88	10.0	8.62	86	2	70-130	30
1,1,2-Trichloroethane	ND	10.0	9.20	92	10.0	9.08	91	1	70-130	30
1,1-Dichloroethane	ND	10.0	9.57	96	10.0	9.15	92	4	70-130	30
1,1-Dichloroethene	ND	10.0	8.86	89	10.0	8.57	86	3	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	9.50	95	10.0	9.74	97	3	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	10.4	104	10.0	10.5	105	1	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	10.1	101	1	60-130	30
1,2-Dichlorobenzene	ND	10.0	9.33	93	10.0	8.99	90	4	70-130	30
1,2-Dichloroethane	ND	10.0	9.57	96	10.0	9.36	94	2	70-130	30
1,2-Dichloropropane	ND	10.0	9.39	94	10.0	9.03	90	4	70-130	30
1,3-Dichlorobenzene	ND	10.0	8.87	89	10.0	8.57	86	3	70-130	30
1,4-Dichlorobenzene	ND	10.0	8.94	89	10.0	8.58	86	4	70-130	30
2-Butanone	ND	50.0	47.9	96	50.0	48.7	97	2	60-140	30
2-Hexanone	ND	50.0	50.2	100	50.0	52.0	104	4	70-140	30
4-Methyl-2-Pentanone	ND	50.0	47.7	95	50.0	48.9	98	3	60-140	30
Acetone	ND	50.0	54.7	109	50.0	55.0	110	1	50-150	30
Benzene	ND	10.0	9.29	93	10.0	8.85	89	5	70-130	30
Bromochloromethane	ND	10.0	9.20	92	10.0	8.95	90	3	70-130	30
Bromodichloromethane	ND	10.0	9.12	91	10.0	8.92	89	2	70-130	30
Bromoform	ND	10.0	9.24	92	10.0	8.73	87	6	60-140	30
Bromomethane	ND	10.0	7.77	78	10.0	7.17	72	8	50-140	30
Carbon Disulfide	ND	10.0	12.6	126	10.0	10.3	103	21	50-140	30
Carbon Tetrachloride	ND	10.0	9.57	96	10.0	9.13	91	5	70-130	30
Chlorobenzene	ND	10.0	9.54	95	10.0	9.11	91	5	70-130	30
Chloroethane	ND	10.0	8.35	83	10.0	7.71	77	8	70-140	30
Chloroform	ND	10.0	9.98	100	10.0	9.63	96	4	70-130	30
Chloromethane	ND	10.0	7.80	78	10.0	7.08	71	10	60-130	30
cis-1,2-Dichloroethene	ND	10.0	8.55	86	10.0	8.18	82	4	70-130	30
cis-1,3-Dichloropropene	ND	10.0	9.09	91	10.0	8.98	90	1	70-130	30
Dibromochloromethane	ND	10.0	9.31	93	10.0	9.06	91	3	70-130	30
Ethylbenzene	ND	10.0	9.44	94	10.0	8.95	89	5	70-130	30
IsopropylBenzene	ND	10.0	10.1	101	10.0	9.70	97	4	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	8.75	87	10.0	8.83	88	1	70-140	30
Methylene Chloride	0.503J	10.0	9.15	92	10.0	8.99	90	2	70-130	30
Styrene	ND	10.0	9.23	92	10.0	8.91	89	3	70-130	30
Tetrachloroethene	ND	10.0	9.61	96	10.0	8.94	89	7	70-130	30
Toluene	ND	10.0	9.52	95	10.0	8.97	90	6	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	8.60	86	10.0	8.33	83	3	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	9.36	94	10.0	9.21	92	2	70-140	30
Trichloroethene	ND	10.0	9.40	94	10.0	9.11	91	3	70-130	30
Vinyl Acetate	ND	10.0	7.66	77	10.0	7.42	74	3	20-160	30
Vinyl Chloride	ND	10.0	8.98	90	10.0	8.42	84	6	60-150	30
m- and p-Xylene	ND	20.0	18.9	94	20.0	18.1	90	4	70-130	30
o-Xylene	ND	10.0	9.15	92	10.0	8.86	89	3	70-130	30
Xylenes (Total)	ND	30.0	28.0	93	30.0	26.9	90	4	70-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.32	93	10.0	9.51	95	70-140
4-Bromofluorobenzene	10.0	9.15	91	10.0	8.97	90	70-130
Toluene-d8	10.0	10.1	101	10.0	9.90	99	70-130

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

April 26, 2013

SUBJECT: Treasure Island, IR Sites 6 & 12, Data Validation

Dear Mrs. Bjorkman,

Enclosed is the final validation report and Excel qualification sheet for the fractions listed below. This SDG was received on April 11, 2013.

LDC project # 29507:

SDG #s	**Fraction**
13C076	TPH-G (EPA SW 846 Method 8015) TPH-E (EPA SW 846 Method 8015) Dissolved Gases (Method RSK-175) Wet Chemistry (EPA Method 300.0, 353.3, and 376.1)

The following deliverables are submitted under this report:

- Attachment I — Sample ID Cross Reference and Data Review Level
- Attachment II — Overall Data Qualification Summary
- Enclosure I — EPA Level III ADR Outliers (including manual review outliers)
- Enclosure II — EPA Level IV DVR (manual review)

The data validation was performed in accordance to the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008, and Inorganic Data Review, January 2010. Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience. The following items were evaluated during the review:

- Holding Times
- Sample Preservation
- Cooler Temperatures
- Initial Calibration (Manual Review)
- Continuing Calibration (Manual Review)
- Blanks
- Surrogates
- Internal Standards (Manual Review)

- Matrix Spike/Matrix Spike Duplicates
- Laboratory Control Samples
- Detection and Quantitation Limits
- Field QC Samples

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Chemist

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Mar-2013	IR6-031313-TB1	C076-01	TB	5030B	8015B GRO	3
13-Mar-2013	IR06-031313-26	C076-02	N	3520C	8015B DRO	4
13-Mar-2013	IR06-031313-26	C076-02	N	5030B	8015B GRO	4
13-Mar-2013	IR06-031313-26	C076-02	N	GEN PREP	353.3	4
13-Mar-2013	IR06-031313-26	C076-02	N	GEN PREP	376.1	4
13-Mar-2013	IR06-031313-26	C076-02	N	GEN PREP	RSK-175	4
13-Mar-2013	IR06-031313-26DUP	C076-02D	DUP	GEN PREP	353.3	4
13-Mar-2013	IR06-031313-26	C076-02I	N	GEN PREP	RSK-175	4
13-Mar-2013	IR06-031313-26	C076-02J	N	GEN PREP	300.0	4
13-Mar-2013	IR06-031313-26MS	C076-02M	MS	GEN PREP	353.3	4
13-Mar-2013	IR06-031313-25	C076-03	N	3520C	8015B DRO	3
13-Mar-2013	IR06-031313-25	C076-03	N	5030B	8015B GRO	3
13-Mar-2013	IR06-031313-25	C076-03	N	GEN PREP	353.3	3
13-Mar-2013	IR06-031313-25	C076-03	N	GEN PREP	376.1	3
13-Mar-2013	IR06-031313-25	C076-03	N	GEN PREP	RSK-175	3
13-Mar-2013	IR06-031313-25	C076-03I	N	GEN PREP	300.0	3
13-Mar-2013	IR06-031313-25	C076-03I	N	GEN PREP	RSK-175	3
13-Mar-2013	IR06-031313-SB	C076-04	SB	3520C	8015B DRO	3
13-Mar-2013	IR06-031313-SB	C076-04	SB	GEN PREP	300.0	3
13-Mar-2013	IR06-031313-SB	C076-04	SB	GEN PREP	353.3	3
13-Mar-2013	IR06-031313-SB	C076-04	SB	GEN PREP	376.1	3
13-Mar-2013	IR06-031313-SB	C076-04	SB	GEN PREP	RSK-175	3
13-Mar-2013	IR06-031313-SB	C076-04R	SB	5030B	8015B GRO	3
13-Mar-2013	IR06-031313-ER	C076-05	ER	3520C	8015B DRO	3
13-Mar-2013	IR06-031313-ER	C076-05	ER	5030B	8015B GRO	3
13-Mar-2013	IR06-031313-ER	C076-05	ER	GEN PREP	300.0	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
13-Mar-2013	IR06-031313-ER	C076-05	ER	GEN PREP	353.3	3
13-Mar-2013	IR06-031313-ER	C076-05	ER	GEN PREP	376.1	3
13-Mar-2013	IR06-031313-ER	C076-05	ER	GEN PREP	RSK-175	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 13C076 **Laboratory: EMXT**

EDD Filename: 13C076 **eQAPP Name: NSTI IR 6 and 12**

Method Category: **GENCHEM**

Method: **300.0** ***Matrix:*** **AQ**

Sample ID: **IR06-031313-ER** ***Collected:*** **3/13/2013 1:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.129	J	0.100	MDL	0.200	PQL	MG/L	U	Fb

Sample ID: **IR06-031313-SB** ***Collected:*** **3/13/2013 1:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.123	J	0.100	MDL	0.200	PQL	MG/L	J	RI

Method Category: **GENCHEM**

Method: **353.3** ***Matrix:*** **AQ**

Sample ID: **IR06-031313-ER** ***Collected:*** **3/13/2013 1:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITRATE as NITROGEN	0.0728	J	0.02	MDL	0.1	PQL	MG/L	U	Fb

Sample ID: **IR06-031313-SB** ***Collected:*** **3/13/2013 1:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITRATE as NITROGEN	0.0702	J	0.02	MDL	0.1	PQL	MG/L	J	RI

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Data Qualifier Summary

Lab Reporting Batch ID: 13C076 **Laboratory: EMXT**

EDD Filename: 13C076 **eQAPP Name: NSTI IR 6 and 12**

Reason Code Legend

Reason Code	*Description*
Fb	Field Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Enclosure I

EPA Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

13C076

Field Blank Outlier Report

Lab Reporting Batch ID: 13C076 **Laboratory: EMXT**

EDD Filename: 13C076 **eQAPP Name: NSTI IR 6 and 12**

Method: **300.0**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR06-031313-SB(RES)	3/13/2013 1:20:00 PM	CHLORIDE	0.123 MG/L	IR06-031313-ER

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR06-031313-ER(RES)	CHLORIDE	0.129 MG/L	0.129U MG/L

Method: **353.3**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR06-031313-SB(RES)	3/13/2013 1:20:00 PM	NITRATE as NITROGEN	0.0702 MG/L	IR06-031313-ER

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR06-031313-ER(RES)	NITRATE as NITROGEN	0.0728 MG/L	0.0728U MG/L

Reporting Limit Outliers

Lab Reporting Batch ID: 13C076 **Laboratory: EMXT**

EDD Filename: 13C076 **eQAPP Name: NSTI IR 6 and 12**

Method: **300.0**

Matrix: **AQ**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR06-031313-ER	CHLORIDE	J	0.129	0.200	PQL	MG/L	J (all detects)
IR06-031313-SB	CHLORIDE	J	0.123	0.200	PQL	MG/L	J (all detects)

Method: **353.3**

Matrix: **AQ**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR06-031313-ER	NITRATE as NITROGEN	J	0.0728	0.1	PQL	MG/L	J (all detects)
IR06-031313-SB	NITRATE as NITROGEN	J	0.0702	0.1	PQL	MG/L	J (all detects)

LDC #: 29507A6

SDG #: 13C076

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR ~~IV~~

Date: 4/19/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Chloride, Sulfate (EPA Method 300.0), Nitrate-N (EPA Method 353.3), Sulfide (EPA Method 376.1), ~~TDS (EPA Method 160.1)~~ [illegible]

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/13/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. 3 MS/Dup
VI.	Duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	—	ER=4, SB=3

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	IR06-031313-26**	11	MB	21		31	
2	IR06-031313-25	12		22		32	
3	IR06-031313-SB	13		23		33	
4	IR06-031313-ER	14		24		34	
5	IR06-031313-26MS	15		25		35	
6	IR06-031313-26DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507A7

SDG #: 13C076

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/~~IV~~

Date: 4/18/13

Page: 1 of 1

Reviewer: SW

2nd Reviewer: A

METHOD: GC TPH as Gasoline (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	icv/ccv ≤ 20
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	N	Not reviewed for ADR validation.
VIII.	Target compound identification	N	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	N	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	N	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	ND	TB=1, SB=4, ER=5

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
ER = EQUIPMENT RINSATE
SB = SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

WATER

1	IR6-031313-TB1	11		21		31	MBLK1W
2	IR06-031313-26**	12		22		32	
3	IR06-031313-25	13		23		33	
4	IR06-031313-SB	14		24		34	
5	IR06-031313-ER	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507A8

VALIDATION COMPLETENESS WORKSHEET

Date: 4/18/13

SDG #: 13C076

ADR ~~IV~~

Page: 1 of 1

Laboratory: EMAX Laboratories, Inc.

Reviewer: SW

2nd Reviewer: A

METHOD: GC TPH as Extractables (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	icv/ccv ≤ 20
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	N	Not reviewed for ADR validation.
VIII.	Target compound identification	N	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	N	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	N	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	ND	SB = 3, ER = 4

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
ER = EQUIPMENT RINSATE
SB = SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

WATER

1	IR06-031313-26**	11		21		31	MBLK IW
2	IR06-031313-25	12		22		32	
3	IR06-031313-SB	13		23		33	
4	IR06-031313-ER	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507A51

SDG #: 13C076

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/18/13

Page: 1 of 1

Reviewer: SW

2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	icv/ccv ≤ 20
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	N	Not reviewed for ADR validation.
VIII.	Target compound identification	N	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	ND	SB=5, ER=6

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; ER= EQUIPMENT RINSATE; SB= SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

WATER

1	IR06-031313-26**	11		21		31	MBLK-IW
2	IR06-031313-26DL**	12		22		32	
3	IR06-031313-25	13		23		33	
4	IR06-031313-25DL	14		24		34	
5	IR06-031313-SB	15		25		35	
6	IR06-031313-ER	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507 A 51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	METHANE	EXCEEDED CALIBRATION	1, 3	J DETS / A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	←	METHANE >cal. range	~~2,4~~ 1,3 SW	X / A
	METHANE, ETHENE	DILUTION	2,4	X/A

Comments: _____

Enclosure II

EPA Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	March 13, 2013
LDC Report Date:	April 23, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C076

Sample Identification

IR06-031313-26

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride and Sulfate, EPA Method 353.3 for Nitrate as Nitrogen, and EPA Method 376.1 for Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample IR06-031313-ER was identified as an equipment rinsate. No contaminant concentrations were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
IR06-031313-ER	3/13/13	Nitrate as N Chloride	0.0728 mg/L 0.129 mg/L	All samples in SDG 13C076

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13C076	All analytes reported below the RL and above the MDL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Data Qualification Summary - SDG 13C076

SDG	Sample	Compound	Flag	A or P	Reason
13C076	IR06-031313-26	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

LDC #: 29507A6

SDG #: 13C076

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

Date: 4/19/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Chloride, Sulfate (EPA Method 300.0), Nitrate-N (EPA Method 353.3), Sulfide (EPA Method 376.1), ~~TDS (EPA Method 160.1)~~

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/13/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. } MS/DUP
VI.	Duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI.	Field blanks	SW	ER=4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	IR06-031313-26**	11	MB	21		31	
2	~~IR06-031313-25~~	12		22		32	
3	IR06-031313-SB	13		23		33	
4	IR06-031313-ER	14		24		34	
5	IR06-031313-26MS	15		25		35	
6	IR06-031313-26DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29597A6

VALIDATION FINDINGS CHECKLIST

Reviewer: W
2nd Reviewer: A

Method: Inorganics (EPA Method Lucow

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)	✓			
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 29507A6

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 49507A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-4	A2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 S ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
~5.6	A2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____

Comments:

LDC #: 29507A6

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 3/13/13 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All (ND) – > 5x)

Analyte	Blank ID	Action Limit	Sample Identification										
	4												
NO3-N	0.0728	0.364											
Cl	0.129	0.645											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 29597A6

Validatin Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of Cl was recalculated.Calibration date: 3/1/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found X 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	Cl	s1	0.05	7.239	*0.999918*	0.999918	Y
		s2	0.1	14.35			
		s3	0.2	30.97			
		s4	0.5	76.26			
		s5	1	157.3			
		s6	2	331.6			
		s7	5	873.2			
		s8	10	1767			
CCV 10 Calibration verification	Cl	2.0	1.898		94.9	94.9	Y
CCV 10 Calibration verification	SO4	5.0	4.798		96	96	Y
CCV Calibration verification	NO3-N	0.50	0.502		100	100	Y

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A6

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See below

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	S	2.16	2	108	108	Y
5	Matrix spike sample	NO_3-N	(SSR-SR) 0.505	0.5	101	101	↓
6	Duplicate sample	↓	ND	ND	–	–	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 29507A10

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for 1 reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

$SO_4 = (0.0081509 \times Area + 0.0495688) \times DF$

$= (0.0081509 \times 165.337 + 0.0495688) \times 20 = 27.94$ mg/L

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	1	Cl	76.5	76.5	Y
		SO_4	27.9	27.9	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	March 13, 2013
LDC Report Date:	April 24, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C076

Sample Identification

IR06-031313-26

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample IR6-031313-TB1 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample IR06-031313-ER was identified as an equipment rinsate. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C076	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 13C076

SDG	Sample	Compound	Flag	A or P	Reason
13C076	IR06-031313-26	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

LDC #: 29507A7

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

Date: 4/18/13

SDG #: 13C076

Page: 1 of 1

Laboratory: EMAX Laboratories, Inc.

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC TPH as Gasoline (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. CS
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	ND	TB=1, SB=4, ER=5

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank
ER = EQUIPMENT RINSATE

SB = SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

WATER

1	~~IR6-031313-TB1~~	11		21		31	MBLK-1W
2	IR06-031313-26**	12		22		32	
3	~~IR06-031313-25~~	13		23		33	
4	IR06-031313-SB	14		24		34	
5	~~IR06-031313-ER~~	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507A7

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: [illegible]

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) < 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) < 15.0% or ≤ 20.0% ?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			

LDC #: 29507A1

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 29507A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ____ HPLC (EPA 8015M)

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
Average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where: A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (50.0 std)	Recalculated CF (50.0 std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	EA03003A	01/03/2013 12:05	GASOLINE (C6-C10)	21678	21677.92	21454.8	21454.799	5.2	5.2
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507 A7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC (EPA 8015M)

The continuing calibration percent difference (%D) values were recalculated for GASOLINE using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = __ Initial Calibration Factor or __ Nominal Amount (ng)
C = __ Calibration Factor from Continuing Calibration Standard or __ Calculated Amount (ng)

Standard ID	Calibration Date/Time	Compound	Average CF/ CCV Conc	Reported CF/Conc CCV	Recalculated CF/Conc CCV	Reported %D	Recalculated %D
EC18015A	03/18/2013 20:09	GASOLINE (C6-C10)	500.0	487.46	487.4623	3	3

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507 A7

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: SW
2nd reviewer: [illegible]

METHOD: X GC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
BROMOFLUOROBENZENE		40.0	38.93	97.3	97.329	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 29507-A7

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: VG39C06L / VG39C06C

Compound	Spike Added (µg/L)		Sample Conc. (µg/L)	Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
GASOLINE (C6-C10)	500	500	ND	431	413	86	86.10	83	82.50	4	4

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name GASOLINE

Concentration = ND

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	March 13, 2013
LDC Report Date:	April 24, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C076

Sample Identification

IR06-031313-26

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Sample IR06-031313-ER was identified as an equipment rinsate. No total petroleum hydrocarbons as extractable contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C076	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 13C076

SDG	Sample	Compound	Flag	A or P	Reason
13C076	IR06-031313-26	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

LDC #: 29507A8

SDG #: 13C076

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

Date: 4/18/13

Page: 1 of 1

Reviewer: SW

2nd Reviewer: A

METHOD: GC TPH as Extractables (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	icv/ccv ≤ 20
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. CS
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	ND	~~SB~~ = 3, ~~ER~~ = 4

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank
~~ER~~ = EQUIPMENT RINSATE

SB = SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

1	IR06-031313-26** (WATER)	11		21		31	MBLKIW
2	~~IR06-031313-25~~	12		22		32	
3	IR06-031313-SB	13		23		33	
4	~~IR06-031313-ER~~	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507-A8

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: [illegible]

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) < 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) < 15.0% or < 20.0%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			

LDC #: 29507A8

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 29507A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ____ HPLC (EPA 8015 M)

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
Average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where: A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (10.0 std)	Recalculated CF (10.0 std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	LA08003A	01/08/2013 18:00	DIESEL (C10-C24)	28220	28220	29095.6	29095.622	4.7	4.7
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC (EPA 8015M)

The continuing calibration percent difference (%D) values were recalculated for DIESEL using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = __ Initial Calibration Factor or __ Nominal Amount (ng)
C = __ Calibration Factor from Continuing Calibration Standard or __ Calculated Amount (ng)

Standard ID	Calibration Date/Time	Compound	Average CF/ CCV Conc	Reported CF/Conc CCV	Recalculated CF/Conc CCV	Reported %D	Recalculated %D
LC20003A	03/20/2013 12:40	DIESEL (C10-C24)	500.0	499.08	499.0810	0	0

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: SW
2nd reviewer: [illegible]

METHOD: X GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
BROMOBENZENE		100	89.496	89.5	89.496	0
HEXACOSANE		25	25.737	103	102.949	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 29507AB

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: DSC011WL / DSC011WC

Compound	Spike Added (µg/L)		Sample Conc. (µg/L)	Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
DIESEL (C10-C24)	5000	5000	ND	4360	4470	87	87.16	89	89.35	2	2

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1 Compound Name DIESEL

Concentration = ND

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	March 13, 2013
LDC Report Date:	April 24, 2013
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C076

Sample Identification

IR06-031313-26
IR06-031313-26DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

Sample IR06-031313-ER was identified as an equipment blank. No methane, ethane, or ethene was found.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
IR06-031313-26	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C076	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
IR06-031313-26	Methane	X	A
IR06-031313-26DL	Methane Ethene	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13C076

SDG	Sample	Compound	Flag	A or P	Reason
13C076	IR06-031313-26	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13C076	IR06-031313-26 IR06-031313-26DL	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13C076	IR06-031313-26	Methane	X	A	Overall assessment of data
13C076	IR06-031313-26DL	Methane Ethene	X	A	Overall assessment of data

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13C076

No Sample Data Qualified in this SDG

LDC #: 29507A51

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~ IV

Date: 4/18/13

SDG #: 13C076

Page: 1 of 1

Laboratory: EMAX Laboratories, Inc.

Reviewer: SW

2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 03/13/2013
II	Initial calibration	A	RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. CS
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/LCSD
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	~~Not reviewed for ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	ND	SB = 5, ER = 6

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank
ER = EQUIPMENT RINSATE

SB = SOURCE BLANK

Validated Samples: ** Indicates sample underwent Level IV validation

WATER

+ 1	IR06-031313-26**	11		21		31	MBLK IW
+ 2	IR06-031313-26DL**	12		22		32	
3	~~IR06-031313-25~~	13		23		33	
4	IR06-031313-25DL	14		24		34	
5	IR06-031313-SB	15		25		35	
6	~~IR06-031313-ER~~	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29507A51

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: [illegible]

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) < 20%?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) < 15.0% or < 20.0% ?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			

LDC #: 29507A51

VALIDATION FINDINGS CHECKLIST

Reviewer: SW
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?		✓		
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.		✓		
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: SW
2nd Reviewer:

METHOD: X GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	METHANE	EXCEEDED CALIBRATION	1	J DETS / A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	←	METHANE overranged	1	R/A
	←	ETHANE, ETHENE dilution	2	R/A

Comments: _____

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ____ HPLC (EPA RSK-175)

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
Average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where: A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (3.4 std)	Recalculated CF (3.4 std)	Reported CF (initial)	Recalculated CF (intial)	Reported %RSD	Recalculated %RSD
1	FA11008A	01/11/2013 11:36	METHANE	34054	34053.982	33691.7	33689.097	5.9	5.9
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507-A51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC (EPA RSK - 175)

The continuing calibration percent difference (%D) values were recalculated for METHANE using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where: N = ___ Initial Calibration Factor or ___ Nominal Amount (ng)
C = ___ Calibration Factor from Continuing Calibration Standard or ___ Calculated Amount (ng)

Standard ID	Calibration Date/Time	Compound	Average CF/ CCV Conc	Reported CF/Conc CCV	Recalculated CF/Conc CCV	Reported %D	Recalculated %D
FC18002A	03/18/2013 10:27	METHANE	13.6	12.88	12.8789	5	5
FC18015A	03/18/2013 13:03	METHANE	13.6	12.75	12.7473	6	6

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: SW

2nd Reviewer: [signature]

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: DGC004WL / DGC004WC

Compound	Spike Added (µg/L)		Sample Conc. (µg/L)	Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
METHANE	13.6	13.6	ND	12.8	12.8	94	94.36	94	93.94	0	0

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29507A51

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: SW
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)~~(Fv)~~(Df) / (RF)~~(Vs or Ws)~~~~(%S/100)~~

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name METHANE

Concentration = (779970.0) (5) / ~~(33689)~~ (33691.7)

= 231.5 µg/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Ms. Jordy Bjorkman

May 30, 2013

SUBJECT: Treasure Island, IR Sites 6 & 12, Data Validation

Dear Ms. Bjorkman,

Enclosed is the final validation report for the fractions listed below. This SDG was received on May 30, 2013.

LDC project # 29809:

SDG #	**Fraction**
13D084	Volatiles (EPA SW 846 Method 8260B)

The following deliverables are submitted under this report:

- Attachment I — Sample ID Cross Reference and Data Review Level
- Attachment II — Overall Data Qualification Summary
- Enclosure I — EPA Level III ADR Outliers (including manual review outliers)

The data validation was performed in accordance to the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008. Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience. The following items were evaluated during the review:

- Holding Times
- Sample Preservation
- Cooler Temperatures
- Initial Calibration (Manual Review)
- Continuing Calibration (Manual Review)
- Blanks
- Surrogates
- Internal Standards (Manual Review)
- Matrix Spike/Matrix Spike Duplicates
- Laboratory Control Samples
- Detection and Quantitation Limits
- Field QC Samples

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Chemist

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Apr-2013	IR6-041613-TB1	D084-01	TB	5030B	8260B	3
16-Apr-2013	IR6-041613-25	D084-02	N	5030B	8260B	3
16-Apr-2013	IR6-041613-25	D084-02T	N	5030B	8260B	3
16-Apr-2013	IR6-041613-26	D084-03	N	5030B	8260B	3
16-Apr-2013	IR6-041613-26	D084-03R	N	5030B	8260B	3
16-Apr-2013	IR6-041613-SB	D084-04	SB	5030B	8260B	3
16-Apr-2013	IR6-041613-ER	D084-05	EB	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 13D084

Laboratory: EMXT

EDD Filename: 13D084

eQAPP Name: TI_Site6and12_053013

No Data Review Qualifiers Applied.

Enclosure I

EPA Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

13D084

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 13D084
EDD Filename: 13D084

Laboratory: EMXT
eQAPP Name: TI_Site6and12_053013

Method: 8260B **Preparation Method: 5030B**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
IR6-041613-26 (RE)	Sampling To Analysis	17.00	14.00	DAYS	J (all detects) UJ (all non-detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 13D084 **Laboratory: EMXT**

EDD Filename: 13D084 **eQAPP Name: TI_Site6and12_053013**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
IR6-041613-25	ISOPROPYLBENZENE	J	7.8	20	PQL	UG/L	J (all detects)

LDC #: 29809A1

SDG #: 13D084

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 5/30/13

Page: 1 of 1

Reviewer: C

2nd Reviewer: W

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	N	Sampling dates: 4/16/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 30, r²
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25
V.	Blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A ~~N~~	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	SW	
XIII.	Tentitatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	N	
XVII.	Field blanks	↓	TB = 1 SB = 6 ER = 7

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	IR6-041613-TB1 W	11	MBLK1W	21		31	
2	IR6-041613-25	12	2W	22		32	
3	IR6-041613-25DL	13	3W	23		33	
4	IR6-041613-26	14		24		34	
5	IR6-041613-26RE	15		25		35	
6	IR6-041613-SB	16		26		36	
7	IR6-041613-ER	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 29809A1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and RLs

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		EE, RRR, GG	> calib range	2	J det / A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29809A1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: A
2nd Reviewer: W

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound	Finding	Associated Samples	Qualifications
		EE, RRR, GG	> calib range	2	X / A
		All except EE, RRR, GG	Diluted	3	↓
		All TCL	analyzed outside of H.T.	5	↓

Comments:

OVR.1SB

TABLE OF CONTENTS

CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C012**

SECTION		PAGE
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GC/MS-SVOA	**	3000 –
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-26-2013
EMAX Batch No.: 13C012

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/06/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
030413-TB-03	C012-01	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW13-030413	C012-02	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP36-030413	C012-03	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW05-030413	C012-04	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
030413-SB-03	C012-05	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW04A-030513	C012-06	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW07A1-030513	C012-07	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW07A2-030513	C012-08	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW07A3-030513	C012-09	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW07A3-030513-D	C012-10	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB96-030513	C012-11	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
030413-TB-04	C012-12	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW03B-030413	C012-13	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW03A-030413	C012-14	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW04B-030413	C012-15	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW11A-030513	C012-16	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW11B-030513	C012-17	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB96-030513MS	C012-11M	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB96-030513MSD	C012-11S	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW11A-030513MS	C012-16M	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW11A-030513MSD	C012-16S	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER NN-030413

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: NN	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 13C012
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	030413-TB-03	3/4/13	1430	3	X		W	10 DAY	X	Trip Blank
2	21-MW13-030413	3/4/13	1520	3		X	W	10 DAY	X	
3	21-IP36-030413	3/4/13	1645	3	X		W	10 DAY	X	
4	21-MW05-030413	3/4/13	1755	3	X		W	10 DAY	X	
5	030413-SB-03	3/4/13	1810	3	X		W	10 DAY	X	Source Blank Lot#9
6	21-MW04A-030513	3/5/13	0900	3	X		W	10 DAY	X	
7	21-MW07A1-030513	3/5/13	0945	3	X		W	10 DAY	X	
8	21-MW07A2-030513	3/5/13	1040	3	X		W	10 DAY	X	
9	21-MW07A3-030513	3/5/13	1125	3	X		W	10 DAY	X	
10	21-MW07A3-030513-D	3/5/13	1130	3	X		W	10 DAY	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
P. Nilmm	3/5/13	[signature] 3/6/13
COMPANY: Trevet	TIME: 1700	COMPANY: EMAX 0:15
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.9/3.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

Cooler 1

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER NN- 030513

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: NN	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C012

ANALYSES REQUIRED

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
(19) 24-BB96-030513	3/5/13	1410	9	X		W	10 DAY	X	MS/MSD

NN

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
P. Nilsson	3/5/13	
COMPANY: Trevet	TIME: 1700	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/6/13	RECEIVED BY (Signature): [illegible]
COMPANY	TIME: 09:15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.9/3.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 1

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER JM-030413

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: Justin Mercer	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C012

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
12	030413-TB-04	3/4/13	15:15	3	X		W	10 day	X	Trip Blank
13	21-MW03B-030413	3/4/13	15:35	3		X	W	10 day	X	21-MW03B
14	21-MW03A-030413	3/4/13	16:20	3	X		W	10 day	X	21-MW03A
15	21-MW04B-030413	3/4/13	17:20	3	X		W	10 day	X	21-MW04B
16	21-MW11A-030513	3/5/13	09:30	9	X		W	10 day	X	21-MW11A MS/MSD
17	21-MW11B-030513	3/5/13	10:55	3	X		W	10 day	X	21-MW11B

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	3/5/13	
COMPANY: Trevet	TIME: 1700	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/6/13	RECEIVED BY (Signature)
COMPANY	TIME: 09:15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.9/3.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

Cooler 2

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8022 7092 5807	ECN 130012
EMAX Courier ☐ Client Delivery		Recipient Gruver
		Date 3/6/13 Time 09:15

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☑ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
☑ Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic bag
Temperatures (cool, ≤6 °C but not frozen)	☑ Cooler 1 3.9 °C	☑ Cooler 2 3.6 °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note: pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code
8	24	B3	Label - 21 - ML10 + ML2 - 030513	3/6/13

☐ Continue to next page.

REVIEWS

Sample Labeling ____ Date 3/6/13

SRF ____ Date 3/6/13

PM ____ Date 3/6/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG ____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Tuesday, March 26, 2013 1:12 PM
To: 'Jordana Scanlan'; Gerald Tamashiro
Cc: Ye Myint
Subject: Results SDG: 13C012 (Treasure Island site 21 and 24)

Hi Jordy,

Attached please find the results for 13C012, thanks.
Hanh

-----Original Message-----
From: Ye Myint
Sent: Wednesday, March 06, 2013 6:40 PM
To: 'Jordana Scanlan'
Cc: Gerald Tamashiro; Hanh Bui
Subject: Samples Logins for Treasure Island site 21 and 24

Hi Jordy,

Attched please find the logins for samples received yesterday for 13C012 and 13C013. I'm also attaching the VOCs list (short list) we reported last year for this project. Please let me know if there are any changes with the requirements.

Thanks.

Ye Myint
Project Manager
EMAX Laboratories, Inc.
1835W 205th. St.
Torrance, CA 90501
Ph: 310-618-8889 x121
Fax: 310-618-0818
E-mail: ymyint@emaxlabs.com

C012
C1013

FedEx Express **NEW Package US Airbill**

FedEx Tracking Number 8022 7092 5807

[redacted]

Form ID No. 0200

4 2 (2) 24 x 14 x 14

1 From

Date 3/5/13

Sender's Name Patrick [illegible]

Phone [illegible]

Company Travel [illegible]

Address 9883 Carroll Centre Rd. Ste. 228

Dept./Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference A053-002

3 To

Recipient's Name [illegible] receiving

Phone 310 [illegible]-2889

Company Bayax Labs.

Address 1855 W. 205th St.

Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance CA State CA ZIP 90501

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thurs. shipments will be delivered on Mon. unless SAT. Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- Obtain recip. Acct. No. [ ]

[redacted]

Credit Card Auth.

Total Packages 2 Total Weight 88 lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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8022 7092 5807

Cooler 1 → Temp. 3.9°
Cooler 2 → Temp 3.6°

1005

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C012

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C012

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of seventeen (17) water samples were received on 03/06/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with DoD Quality Systems Manual for Environmental Laboratories, Version 4.2 and QAPP.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO01C07L/C were all within QC limits.
Percent recoveries for VO01C08L/C were all within QC limits.

Matrix QC Sample
Two (2) sets of MS/MSD were analyzed with the samples in this SDG.
Percent recoveries for C012-11M/S were within project QC limits.
Percent recoveries for C012-16M/S were within project QC limits.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C012
Instrument ID : T-001

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V001C07B	1	NA	03/06/1313:27	03/06/1313:27	RCV085	RBV110	V001C07	Method Blank
LCS1W	V001C07L	1	NA	03/06/1312:30	03/06/1312:30	RCV083	RBV110	V001C07	Lab Control Sample (LCS)
LCD1W	V001C07C	1	NA	03/06/1312:58	03/06/1312:58	RCV084	RBV110	V001C07	LCS Duplicate
030413-TB-03	C012-01	1	NA	03/06/1313:56	03/06/1313:56	RCV086	RBV110	V001C07	Field Sample
030413-SB-03	C012-05	1	NA	03/06/1314:24	03/06/1314:24	RCV087	RBV110	V001C07	Field Sample
030413-TB-04	C012-12	1	NA	03/06/1314:53	03/06/1314:53	RCV088	RBV110	V001C07	Field Sample
21-MW13-030413	C012-02	1	NA	03/06/1315:25	03/06/1315:25	RCV089	RBV110	V001C07	Field Sample
21-IP36-030413	C012-03	1	NA	03/06/1316:22	03/06/1316:22	RCV091	RBV110	V001C07	Field Sample
24-BB96-030513	C012-11	1	NA	03/06/1317:19	03/06/1317:19	RCV093	RBV110	V001C07	Field Sample
21-MW11A-030513	C012-16	1	NA	03/06/1317:47	03/06/1317:47	RCV094	RBV110	V001C07	Field Sample
24-BB96-030513MS	C012-11M	1	NA	03/06/1318:16	03/06/1318:16	RCV095	RBV110	V001C07	Matrix Spike Sample (MS)
24-BB96-030513MSD	C012-11S	1	NA	03/06/1318:44	03/06/1318:44	RCV096	RBV110	V001C07	MS Duplicate (MSD)
21-MW11A-030513MS	C012-16M	1	NA	03/06/1319:13	03/06/1319:13	RCV097	RBV110	V001C07	Matrix Spike Sample (MS)
21-MW11A-030513MSD	C012-16S	1	NA	03/06/1319:42	03/06/1319:42	RCV098	RBV110	V001C07	MS Duplicate (MSD)
21-MW04A-030513	C012-06	1	NA	03/06/1320:10	03/06/1320:10	RCV099	RBV110	V001C07	Field Sample
21-MW07A1-030513	C012-07	1	NA	03/06/1320:39	03/06/1320:39	RCV100	RBV110	V001C07	Field Sample
21-MW07A2-030513	C012-08	1	NA	03/06/1321:07	03/06/1321:07	RCV101	RBV110	V001C07	Field Sample
21-MW07A3-030513	C012-09	1	NA	03/06/1321:36	03/06/1321:36	RCV102	RBV110	V001C07	Field Sample
21-MW07A3-030513-D	C012-10	1	NA	03/06/1322:04	03/06/1322:04	RCV103	RBV110	V001C07	Field Sample
21-MW03B-030413	C012-13	1	NA	03/06/1322:32	03/06/1322:32	RCV104	RBV110	V001C07	Field Sample
MBLK2W	V001C08B	1	NA	03/07/1313:53	03/07/1313:53	RCV113	RBV110	V001C08	Method Blank
LCS2W	V001C08L	1	NA	03/07/1312:01	03/07/1312:01	RCV109	RBV110	V001C08	Lab Control Sample (LCS)
LCD2W	V001C08C	1	NA	03/07/1312:29	03/07/1312:29	RCV110	RBV110	V001C08	LCS Duplicate
21-MW05-030413	C012-04R	1	NA	03/07/1318:09	03/07/1318:09	RCV122	RBV110	V001C08	Field Sample
21-MW03A-030413	C012-14	1	NA	03/07/1318:38	03/07/1318:38	RCV123	RBV110	V001C08	Field Sample
21-MW04B-030413	C012-15	1	NA	03/07/1319:06	03/07/1319:06	RCV124	RBV110	V001C08	Field Sample
21-MW11B-030513	C012-17	1	NA	03/07/1319:34	03/07/1319:34	RCV125	RBV110	V001C08	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/04/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/06/13
Batch No. : 13C012	Date Extracted: 03/06/13 13:56
Sample ID: 030413-TB-03	Date Analyzed: 03/06/13 13:56
Lab Samp ID: C012-01	Dilution Factor: 1
Lab File ID: RCV086	Matrix : WATER
Ext Btch ID: V001C07	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	9.51	10.00	95.1	75-120
TOLUENE-D8	9.59	10.00	95.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 15:25
Sample ID:	21-MW13-030413	Date Analyzed:	03/06/13 15:25
Lab Samp ID:	C012-02	Dilution Factor:	1
Lab File ID:	RCV089	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.50	10.00	95.0	75-120
TOLUENE-D8	9.67	10.00	96.7	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 16:22
Sample ID:	21-IP36-030413	Date Analyzed:	03/06/13 16:22
Lab Samp ID:	C012-03	Dilution Factor:	1
Lab File ID:	RCV091	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.36J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.53	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.74	10.00	97.4	75-120
TOLUENE-D8	9.46	10.00	94.6	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/07/13 18:09
Sample ID:	21-MW05-030413	Date Analyzed:	03/07/13 18:09
Lab Samp ID:	C012-04R	Dilution Factor:	1
Lab File ID:	RCV122	Matrix :	WATER
Ext Btch ID:	V001C08	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	9.79	10.00	97.9	75-120
TOLUENE-D8	9.43	10.00	94.3	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/04/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/06/13
Batch No. : 13C012	Date Extracted: 03/06/13 14:24
Sample ID: 030413-SB-03	Date Analyzed: 03/06/13 14:24
Lab Samp ID: C012-05	Dilution Factor: 1
Lab File ID: RCV087	Matrix : WATER
Ext Btch ID: V001C07	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	9.56	10.00	95.6	75-120
TOLUENE-D8	9.52	10.00	95.2	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 20:10
Sample ID:	21-MW04A-030513	Date Analyzed:	03/06/13 20:10
Lab Samp ID:	C012-06	Dilution Factor:	1
Lab File ID:	RCV099	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.97	10.00	99.7	70-120
4-BROMOFLUOROBENZENE	9.69	10.00	96.9	75-120
TOLUENE-D8	9.51	10.00	95.1	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 20:39
Sample ID:	21-MW07A1-030513	Date Analyzed:	03/06/13 20:39
Lab Samp ID:	C012-07	Dilution Factor:	1
Lab File ID:	RCV100	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	9.63	10.00	96.3	75-120
TOLUENE-D8	9.44	10.00	94.4	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 21:07
Sample ID:	21-MW07A2-030513	Date Analyzed:	03/06/13 21:07
Lab Samp ID:	C012-08	Dilution Factor:	1
Lab File ID:	RCV101	Matrix :	WATER
Ext Btch ID:	VO01C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.24J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-120
4-BROMOFLUOROBENZENE	9.67	10.00	96.7	75-120
TOLUENE-D8	9.32	10.00	93.2	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 21:36
Sample ID:	21-MW07A3-030513	Date Analyzed:	03/06/13 21:36
Lab Samp ID:	C012-09	Dilution Factor:	1
Lab File ID:	RCV102	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.63	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.23J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.86	10.00	98.6	75-120
TOLUENE-D8	9.42	10.00	94.2	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 22:04
Sample ID:	21-MW07A3-030513-D	Date Analyzed:	03/06/13 22:04
Lab Samp ID:	C012-10	Dilution Factor:	1
Lab File ID:	RCV103	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.65	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.24J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	9.77	10.00	97.7	75-120
TOLUENE-D8	9.62	10.00	96.2	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 17:19
Sample ID:	24-BB96-030513	Date Analyzed:	03/06/13 17:19
Lab Samp ID:	C012-11	Dilution Factor:	1
Lab File ID:	RCV093	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.80	10.00	98.0	75-120
TOLUENE-D8	9.49	10.00	94.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 14:53
Sample ID:	030413-TB-04	Date Analyzed:	03/06/13 14:53
Lab Samp ID:	C012-12	Dilution Factor:	1
Lab File ID:	RCV088	Matrix	: WATER
Ext Btch ID:	V001C07	% Moisture	: NA
Calib. Ref.:	RBV110	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.80	10.00	98.0	75-120
TOLUENE-D8	9.59	10.00	95.9	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 22:32
Sample ID:	21-MW03B-030413	Date Analyzed:	03/06/13 22:32
Lab Samp ID:	C012-13	Dilution Factor:	1
Lab File ID:	RCV104	Matrix :	WATER
Ext Btch ID:	VO01C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.51	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	9.78	10.00	97.8	75-120
TOLUENE-D8	9.39	10.00	93.9	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/07/13 18:38
Sample ID:	21-MW03A-030413	Date Analyzed:	03/07/13 18:38
Lab Samp ID:	C012-14	Dilution Factor:	1
Lab File ID:	RCV123	Matrix :	WATER
Ext Btch ID:	V001C08	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.6	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	12	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.40	10.00	94.0	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/07/13 19:06
Sample ID:	21-MW04B-030413	Date Analyzed:	03/07/13 19:06
Lab Samp ID:	C012-15	Dilution Factor:	1
Lab File ID:	RCV124	Matrix :	WATER
Ext Btch ID:	V001C08	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.25J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.98	10.00	99.8	75-120
TOLUENE-D8	9.36	10.00	93.6	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 17:47
Sample ID:	21-MW11A-030513	Date Analyzed:	03/06/13 17:47
Lab Samp ID:	CD12-16	Dilution Factor:	1
Lab File ID:	RCV094	Matrix :	WATER
Ext Btch ID:	V001C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.22J	0.50	0.20
TETRACHLOROETHENE	0.33J	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.24J	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	9.91	10.00	99.1	75-120
TOLUENE-D8	9.52	10.00	95.2	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/07/13 19:34
Sample ID:	21-MW11B-030513	Date Analyzed:	03/07/13 19:34
Lab Samp ID:	C012-17	Dilution Factor:	1
Lab File ID:	RCV125	Matrix :	WATER
Ext Btch ID:	VO01C08	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	9.84	10.00	98.4	75-120
TOLUENE-D8	9.35	10.00	93.5	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C012	Date Extracted:	03/06/13 13:27
Sample ID:	MBLK1W	Date Analyzed:	03/06/13 13:27
Lab Samp ID:	VO01C07B	Dilution Factor:	1
Lab File ID:	RCV085	Matrix :	WATER
Ext Btch ID:	VO01C07	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.59	10.00	95.9	70-120
4-BROMOFLUOROBENZENE	9.61	10.00	96.1	75-120
TOLUENE-D8	9.48	10.00	94.8	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C012
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V001C07B	V001C07L	V001C07C		
LAB FILE ID:	RCV085	RCV083	RCV084		
DATE EXTRACTED:	03/06/1313:27	03/06/1312:30	03/06/1312:58	DATE COLLECTED:	NA
DATE ANALYZED:	03/06/1313:27	03/06/1312:30	03/06/1312:58	DATE RECEIVED:	03/06/13
PREP. BATCH:	V001C07	V001C07	V001C07		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.03	90	10.0	10.2	102	13	70-125	30
Tetrachloroethene	ND	10.0	8.02	80	10.0	8.72	87	8	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.19	92	10.0	10.3	103	11	60-140	30
Trichloroethene	ND	10.0	8.61	86	10.0	9.28	93	7	70-125	30
Vinyl Chloride	ND	10.0	10.3	103	10.0	11.2	112	9	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.74	97	10.0	10.5	105	70-120
4-Bromofluorobenzene	10.0	10.2	102	10.0	10.1	101	75-120
Toluene-d8	10.0	9.45	95	10.0	9.51	95	85-120
Dibromofluoromethane	10.0	10.3	103	10.0	10.8	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/07/13
Batch No.	: 13C012	Date Extracted:	03/07/13 13:53
Sample ID:	MBLK2W	Date Analyzed:	03/07/13 13:53
Lab Samp ID:	V001C08B	Dilution Factor:	1
Lab File ID:	RCV113	Matrix :	WATER
Ext Btch ID:	V001C08	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	9.72	10.00	97.2	75-120
TOLUENE-D8	9.39	10.00	93.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C012
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V001C08B	V001C08L	V001C08C		
LAB FILE ID:	RCV113	RCV109	RCV110		
DATE EXTRACTED:	03/07/1313:53	03/07/1312:01	03/07/1312:29	DATE COLLECTED:	NA
DATE ANALYZED:	03/07/1313:53	03/07/1312:01	03/07/1312:29	DATE RECEIVED:	03/07/13
PREP. BATCH:	V001C08	V001C08	V001C08		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.73	97	10.0	9.45	94	3	70-125	30
Tetrachloroethene	ND	10.0	8.40	84	10.0	8.16	82	3	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.63	96	10.0	9.31	93	3	60-140	30
Trichloroethene	ND	10.0	8.89	89	10.0	8.70	87	2	70-125	30
Vinyl Chloride	ND	10.0	10.9	109	10.0	10.2	102	7	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	9.97	100	70-120
4-Bromofluorobenzene	10.0	10.3	103	10.0	10.2	102	75-120
Toluene-d8	10.0	9.49	95	10.0	9.53	95	85-120
Dibromofluoromethane	10.0	10.7	107	10.0	10.6	106	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C012
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-BB96-030513				
LAB SAMP ID:	C012-11	C012-11M	C012-11S		
LAB FILE ID:	RCV093	RCV095	RCV096		
DATE EXTRACTED:	03/06/1317:19	03/06/1318:16	03/06/1318:44	DATE COLLECTED:	03/05/13
DATE ANALYZED:	03/06/1317:19	03/06/1318:16	03/06/1318:44	DATE RECEIVED:	03/06/13
PREP. BATCH:	V001C07	V001C07	V001C07		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.39	94	10.0	9.51	95	1	70-125	30
Tetrachloroethene	ND	10.0	8.03	80	10.0	8.14	81	1	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.34	93	10.0	9.78	98	5	60-140	30
Trichloroethene	ND	10.0	8.37	84	10.0	8.58	86	2	70-125	30
Vinyl Chloride	ND	10.0	9.56	96	10.0	10.3	103	7	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.8	108	10.0	10.4	104	70-120
4-Bromofluorobenzene	10.0	10.2	102	10.0	9.92	99	75-120
Toluene-d8	10.0	9.22	92	10.0	9.49	95	85-120
Dibromofluoromethane	10.0	10.8	108	10.0	10.6	106	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C012
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	21-MW11A-030513				
LAB SAMP ID:	C012-16	C012-16M	C012-16S		
LAB FILE ID:	RCV094	RCV097	RCV098		
DATE EXTRACTED:	03/06/1317:47	03/06/1319:13	03/06/1319:42	DATE COLLECTED:	03/05/13
DATE ANALYZED:	03/06/1317:47	03/06/1319:13	03/06/1319:42	DATE RECEIVED:	03/06/13
PREP. BATCH:	V001C07	V001C07	V001C07		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	0.225J	10.0	9.91	97	10.0	9.47	92	5	70-125	30
Tetrachloroethene	0.334J	10.0	8.68	84	10.0	8.33	80	4	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.66	97	10.0	9.38	94	3	60-140	30
Trichloroethene	0.244J	10.0	8.95	87	10.0	8.61	84	4	70-125	30
Vinyl Chloride	ND	10.0	10.7	107	10.0	10.1	101	5	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.2	102	10.0	10.1	101	70-120
4-Bromofluorobenzene	10.0	10.1	101	10.0	10.2	102	75-120
Toluene-d8	10.0	9.30	93	10.0	9.36	94	85-120
Dibromofluoromethane	10.0	10.7	107	10.0	10.4	104	85-115

TABLE OF CONTENTS

CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C013**

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GC/MS-VOA	METHOD 5030B/8260B	2000 – 2189
GC/MS-SVOA	**	3000 –
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-25-2013
EMAX Batch No.: 13C013

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/06/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
21-IP04-030413	C013-01	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP03-030413	C013-02	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
030413-ER-01	C013-03	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
030413-TB-01	C013-04	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW02B-030513	C013-05	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW02A-030513	C013-06	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW02A-030513-D	C013-07	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
030413-TB-02	C013-08	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW09B-030413	C013-09	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP19-030413	C013-10	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW14-030513	C013-11	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP17-030513	C013-12	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB94-030513	C013-13	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
030513-ER-02	C013-14	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP19-030413MS	C013-10M	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP19-030413MSD	C013-10S	03/04/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB94-030513MS	C013-13M	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB94-030513MSD	C013-13S	03/05/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

COC NUMBER PH-030413

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Sites 21 and 24	Send Invoice to Trevet
PROJECT LOCATION	PROJECT NO.
NAVSTA Treasure Island	A083
SAMPLER NAME	AIRBILL NUMBER
P. Hammer	
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
Gerald Tamashiro - TREVET	(714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C013

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	21-IP04-030413	3/4/13	1615	3	X		W	10	X	
2	21-IP03-030413	3/4/13	1712	3		X	W	10	X	
3	030413-ER-01	3/4/13	1808	3	X		W	10	X	Equip Rinse
4	030413-TB-01	3/4/13	1100	~~3~~ 2	X		W	10	X	Trip Blank
5	21-MW02B-030513	3/5/13	0918	3	X		W	10	X	
6	21-MW02A-030513	3/5/13	1015	3		X	W	10	X	
7	21-MW02A-030513-D	3/5/13	1016	3	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY: Trevet	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE: 3/6/13	RECEIVED BY (Signature)
COMPANY	TIME: 09:15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.9/3.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

1001

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

COC NUMBER JBS-030413

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: John B. Spurry	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 130013
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
8	030413-TB-02	3/4/13	1800	3	X		W	10 DAY	X	Trip Blank
9	21-MW09B-030413	3/4/13	1520	3	X		W	10 DAY	X	
10	21-IP19-030413	3/4/13	1640	9	X		W	10 DAY	X	MS/MSD
11	21-MW14-030513	3/5/13	920	3		X	W	10 DAY	X	
12	21-IP17-030513	3/5/13	1050	3	X		W	10 DAY	X	
13	24-BB94-030513	3/5/13	1420	9	X		W	10 DAY	X	MS/MSD
14	030513-ER-02	3/5/13	1515	3	X		W	10 DAY	X	
				735				3/5/13		

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	3/5/13	
COMPANY: Trevet	TIME: 1700	COMPANY
RELINQUISHED BY (Signature)	DATE: 3/6/13	RECEIVED BY (Signature): [signature]
COMPANY	TIME: 09:15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.9/3.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 13 Co 13
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8022 7092 5807	Recipient I Lutz
☐ EMAX Courier ☐ Client Delivery		Date 3/6/13 Time 0920

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☐ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic Bag
Temperatures (Cool, =6 °C but not frozen)	☑ Cooler 1 3.9 °C	☑ Cooler 2 3.6 °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 3/6/13 [signature] 3/6/13

SRF [signature] Date 3/6/13

PM LP for YC Date 3/6/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:12 AM
To: 'Jordana Scanlan'; Gerald Tamashiro
Cc: Ye Myint
Subject: Results SDG: 13C013 (Treasure Island site 21 and 24)

Hi Jordy,
Attached please find the results for 13C013, thanks.
Hanh

-----Original Message-----
From: Ye Myint
Sent: Wednesday, March 06, 2013 6:40 PM
To: 'Jordana Scanlan'
Cc: Gerald Tamashiro; Hanh Bui
Subject: Samples Logins for Treasure Island site 21 and 24

Hi Jordy,

Attched please find the logins for samples received yesterday for 13C012 and 13C013. I'm also attaching the VOCs list (short list) we reported last year for this project. Please let me know if there are any changes with the requirements.

Thanks.

Ye Myint
Project Manager
EMAX Laboratories, Inc.
1835W 205th. St.
Torrance, CA 90501
Ph: 310-618-8889 x121
Fax: 310-618-0818
E-mail: ymyint@emaxlabs.com

·C012
C1013

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8022 7092 5807

[redacted]

4L 2 (2) 24 x 14 x 14

4L 0200

1 From

Date 3/5/13

Sender's Name [illegible] Phone [illegible]

Company Trevet [illegible]

Address 7888 Carroll Centre Rd. Ste. 228 Dept./Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference A003-002

3 To

Recipient's Name [illegible] Phone 310 [illegible]

Company Carex Labs.

Address 1855 W. 208th St. Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight. ☐

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. ☐

Address Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance CA State CA ZIP 90501

4 Express Package Service. * To most locations. NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☒ FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day Second business afternoon.* Thurs. [illegible] will be deliv[illegible] Delivery is selected.

☐ FedEx Express Saver Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required Package may be left without obtaining a signature for delivery.

☐ Direct Signature Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

[redacted] Credit Card Auth.

Total Packages 2 Total Weight 38 lbs.

644

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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fedex.com 1.800.GoFedEx 1.800.463.3339

8022 7092 5807

Cooler 1 → Temp 3.9°
Cooler 2 → Temp 3.6°

1005

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C013

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C013

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of fourteen (14) water samples were received on 03/06/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for V067C04L/C were all within QC limits.
Percent recoveries for V067C05L/C were all within QC limits.

Matrix QC Sample
Two (2) sets of MS/MSD were analyzed with the samples in this SDG.
Percent recoveries for C013-10M/S were within project QC limits.
Percent recoveries for C013-13M/S were within project QC limits.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C013
Instrument ID : T-067

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V067C04B	1	NA	03/06/1316:01	03/06/1316:01	RCC068	RCC051	V067C04	Method Blank
LCS1W	V067C04L	1	NA	03/06/1314:31	03/06/1314:31	RCC065	RCC051	V067C04	Lab Control Sample (LCS)
LCD1W	V067C04C	1	NA	03/06/1315:00	03/06/1315:00	RCC066	RCC051	V067C04	LCS Duplicate
030413-TB-01	C013-04	1	NA	03/06/1316:32	03/06/1316:32	RCC069	RCC051	V067C04	Field Sample
030413-TB-02	C013-08	1	NA	03/06/1317:01	03/06/1317:01	RCC070	RCC051	V067C04	Field Sample
030413-ER-01	C013-03	1	NA	03/06/1317:31	03/06/1317:31	RCC071	RCC051	V067C04	Field Sample
030513-ER-02	C013-14	1	NA	03/06/1318:02	03/06/1318:02	RCC072	RCC051	V067C04	Field Sample
24-BB94-030513	C013-13	1	NA	03/06/1318:33	03/06/1318:33	RCC073	RCC051	V067C04	Field Sample
21-IP19-030413	C013-10	1	NA	03/06/1319:04	03/06/1319:04	RCC074	RCC051	V067C04	Field Sample
21-IP19-030413MS	C013-10M	1	NA	03/06/1319:35	03/06/1319:35	RCC075	RCC051	V067C04	Matrix Spike Sample (MS)
21-IP19-030413MSD	C013-10S	1	NA	03/06/1320:07	03/06/1320:07	RCC076	RCC051	V067C04	MS Duplicate (MSD)
24-BB94-030513MS	C013-13M	1	NA	03/06/1320:38	03/06/1320:38	RCC077	RCC051	V067C04	Matrix Spike Sample (MS)
24-BB94-030513MSD	C013-13S	1	NA	03/06/1321:09	03/06/1321:09	RCC078	RCC051	V067C04	MS Duplicate (MSD)
21-IP04-030413	C013-01	1	NA	03/06/1322:11	03/06/1322:11	RCC080	RCC051	V067C04	Field Sample
21-IP03-030413	C013-02	1	NA	03/06/1322:42	03/06/1322:42	RCC081	RCC051	V067C04	Field Sample
21-MW02B-030513	C013-05	1	NA	03/06/1323:13	03/06/1323:13	RCC082	RCC051	V067C04	Field Sample
21-MW02A-030513	C013-06	1	NA	03/06/1323:44	03/06/1323:44	RCC083	RCC051	V067C04	Field Sample
21-MW02A-030513-D	C013-07	1	NA	03/07/1300:15	03/07/1300:15	RCC084	RCC051	V067C04	Field Sample
MBLK2W	V067C05B	1	NA	03/07/1314:33	03/07/1314:33	RCC092	RCC051	V067C05	Method Blank
LCS2W	V067C05L	1	NA	03/07/1313:03	03/07/1313:03	RCC089	RCC051	V067C05	Lab Control Sample (LCS)
LCD2W	V067C05C	1	NA	03/07/1313:33	03/07/1313:33	RCC090	RCC051	V067C05	LCS Duplicate
21-MW02A-030513-DDL	C013-07T	10	NA	03/07/1315:04	03/07/1315:04	RCC093	RCC051	V067C05	Diluted Sample
21-MW02A-030513DL	C013-06T	10	NA	03/07/1315:33	03/07/1315:33	RCC094	RCC051	V067C05	Diluted Sample
21-MW09B-030413	C013-09	1	NA	03/07/1316:03	03/07/1316:03	RCC095	RCC051	V067C05	Field Sample
21-MW14-030513	C013-11	1	NA	03/07/1316:32	03/07/1316:32	RCC096	RCC051	V067C05	Field Sample
21-IP17-030513	C013-12	1	NA	03/07/1317:01	03/07/1317:01	RCC097	RCC051	V067C05	Field Sample

FN - Filename
% Moist - Percent Moisture

2002

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 22:11
Sample ID:	21-IP04-030413	Date Analyzed:	03/06/13 22:11
Lab Samp ID:	C013-01	Dilution Factor:	1
Lab File ID:	RCC080	Matrix	: WATER
Ext Btch ID:	VO67C04	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.74	10.00	97.4	70-120
4-BROMOFLUOROBENZENE	9.53	10.00	95.3	75-120
TOLUENE-D8	9.88	10.00	98.8	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 22:42
Sample ID:	21-IP03-030413	Date Analyzed:	03/06/13 22:42
Lab Samp ID:	C013-02	Dilution Factor:	1
Lab File ID:	RCC081	Matrix :	WATER
Ext Btch ID:	V067C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.29J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.85	10.00	98.5	70-120
4-BROMOFLUOROBENZENE	9.33	10.00	93.3	75-120
TOLUENE-D8	9.90	10.00	99.0	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/04/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/06/13
Batch No. : 13C013	Date Extracted: 03/06/13 17:31
Sample ID: 030413-ER-01	Date Analyzed: 03/06/13 17:31
Lab Samp ID: C013-03	Dilution Factor: 1
Lab File ID: RCC071	Matrix : WATER
Ext Btch ID: V067C04	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.0	10.00	100	70-120
4-BROMOFLUOROBENZENE	9.26	10.00	92.6	75-120
TOLUENE-D8	9.84	10.00	98.4	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 16:32
Sample ID:	030413-TB-01	Date Analyzed:	03/06/13 16:32
Lab Samp ID:	C013-04	Dilution Factor:	1
Lab File ID:	RCC069	Matrix	: WATER
Ext Btch ID:	V067C04	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.54	10.00	95.4	70-120
4-BROMOFLUOROBENZENE	9.21	10.00	92.1	75-120
TOLUENE-D8	9.99	10.00	99.9	85-120
DIBROMOFLUOROMETHANE	9.98	10.00	99.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 23:13
Sample ID:	21-MW02B-030513	Date Analyzed:	03/06/13 23:13
Lab Samp ID:	C013-05	Dilution Factor:	1
Lab File ID:	RCC082	Matrix :	WATER
Ext Btch ID:	V067C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.0	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.26J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.42J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.39	10.00	93.9	70-120
4-BROMOFLUOROBENZENE	8.99	10.00	89.9	75-120
TOLUENE-D8	9.73	10.00	97.3	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 23:44 # 03/07/13 15:33
Sample ID:	21-MW02A-030513	Date Analyzed:	03/06/13 23:44 # 03/07/13 15:33
Lab Samp ID:	C013-06 #C013-06T	Dilution Factor:	1 # 10
Lab File ID:	RCC083 #RCC094	Matrix :	WATER
Ext Btch ID:	V067C04 #V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	99	0.50	0.20
TETRACHLOROETHENE	1.4	0.50	0.20
TRANS-1,2-DICHLOROETHENE	9.1	0.50	0.20
TRICHLOROETHENE	1.4	0.50	0.20
# VINYL CHLORIDE	130	5.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.81	10.00	98.1	70-120
4-BROMOFLUOROBENZENE	9.64	10.00	96.4	75-120
TOLUENE-D8	9.72	10.00	97.2	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115
# 1,2-DICHLOROETHANE-D4	92.0	100.0	92.0	70-120
# 4-BROMOFLUOROBENZENE	93.3	100.0	93.3	75-120
# TOLUENE-D8	98.4	100.0	98.4	85-120
# DIBROMOFLUOROMETHANE	98.1	100.0	98.1	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 23:44
Sample ID:	21-MW02A-030513	Date Analyzed:	03/06/13 23:44
Lab Samp ID:	C013-06	Dilution Factor:	1
Lab File ID:	RCC083	Matrix :	WATER
Ext Btch ID:	VQ67C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	99	0.50	0.20
TETRACHLOROETHENE	1.4	0.50	0.20
TRANS-1,2-DICHLOROETHENE	9.1	0.50	0.20
TRICHLOROETHENE	1.4	0.50	0.20
VINYL CHLORIDE	110E	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.81	10.00	98.1	70-120
4-BROMOFLUOROBENZENE	9.64	10.00	96.4	75-120
TOLUENE-D8	9.72	10.00	97.2	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 15:33
Sample ID:	21-MW02A-030513DL	Date Analyzed:	03/07/13 15:33
Lab Samp ID:	C013-06T	Dilution Factor:	10
Lab File ID:	RCC094	Matrix :	WATER
Ext Btch ID:	V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	100	5.0	2.0
TETRACHLOROETHENE	ND	5.0	2.0
TRANS-1,2-DICHLOROETHENE	9.9	5.0	2.0
TRICHLOROETHENE	ND	5.0	2.0
VINYL CHLORIDE	130	5.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92.0	100.0	92.0	70-120
4-BROMOFLUOROBENZENE	93.3	100.0	93.3	75-120
TOLUENE-D8	98.4	100.0	98.4	85-120
DIBROMOFLUOROMETHANE	98.1	100.0	98.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 00:15 # 03/07/13 15:04
Sample ID:	21-MW02A-030513-0	Date Analyzed:	03/07/13 00:15 # 03/07/13 15:04
Lab Samp ID:	C013-07 #C013-07T	Dilution Factor:	1 # 10
Lab File ID:	RCC084 #RCC093	Matrix	: WATER
Ext Btch ID:	V067C04 #V067C05	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHENE	100	5.0	2.0
TETRACHLOROETHENE	1.5	0.50	0.20
TRANS-1,2-DICHLOROETHENE	9.3	0.50	0.20
TRICHLOROETHENE	1.4	0.50	0.20
# VINYL CHLORIDE	120	5.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.04	10.00	90.4	70-120
4-BROMOFLUOROBENZENE	9.28	10.00	92.8	75-120
TOLUENE-D8	9.77	10.00	97.7	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115
# 1,2-DICHLOROETHANE-D4	93.7	100.0	93.7	70-120
# 4-BROMOFLUOROBENZENE	89.9	100.0	89.9	75-120
# TOLUENE-D8	98.5	100.0	98.5	85-120
# DIBROMOFLUOROMETHANE	99.8	100.0	99.8	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 00:15
Sample ID:	21-MW02A-030513-D	Date Analyzed:	03/07/13 00:15
Lab Samp ID:	C013-07	Dilution Factor:	1
Lab File ID:	RCC084	Matrix :	WATER
Ext Btch ID:	V067C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	100E	0.50	0.20
TETRACHLOROETHENE	1.5	0.50	0.20
TRANS-1,2-DICHLOROETHENE	9.3	0.50	0.20
TRICHLOROETHENE	1.4	0.50	0.20
VINYL CHLORIDE	120E	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.04	10.00	90.4	70-120
4-BROMOFLUOROBENZENE	9.28	10.00	92.8	75-120
TOLUENE-D8	9.77	10.00	97.7	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 15:04
Sample ID:	21-MW02A-030513-DDL	Date Analyzed:	03/07/13 15:04
Lab Samp ID:	C013-07T	Dilution Factor:	10
Lab File ID:	RCC093	Matrix :	WATER
Ext Btch ID:	V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	100	5.0	2.0
TETRACHLOROETHENE	ND	5.0	2.0
TRANS-1,2-DICHLOROETHENE	9.7	5.0	2.0
TRICHLOROETHENE	ND	5.0	2.0
VINYL CHLORIDE	120	5.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93.7	100.0	93.7	70-120
4-BROMOFLUOROBENZENE	89.9	100.0	89.9	75-120
TOLUENE-D8	98.5	100.0	98.5	85-120
DIBROMOFLUOROMETHANE	99.8	100.0	99.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/04/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/06/13
Batch No. : 13C013	Date Extracted: 03/06/13 17:01
Sample ID: 030413-TB-02	Date Analyzed: 03/06/13 17:01
Lab Samp ID: C013-08	Dilution Factor: 1
Lab File ID: RCC070	Matrix : WATER
Ext Btch ID: V067C04	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	9.19	10.00	91.9	75-120
TOLUENE-D8	9.82	10.00	98.2	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 16:03
Sample ID:	21-MW098-030413	Date Analyzed:	03/07/13 16:03
Lab Samp ID:	C013-09	Dilution Factor:	1
Lab File ID:	RCC095	Matrix :	WATER
Ext Btch ID:	V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.33	10.00	93.3	70-120
4-BROMOFLUOROBENZENE	8.97	10.00	89.7	75-120
TOLUENE-D8	9.67	10.00	96.7	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/04/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 19:04
Sample ID:	21-IP19-030413	Date Analyzed:	03/06/13 19:04
Lab Samp ID:	C013-10	Dilution Factor:	1
Lab File ID:	RCC074	Matrix	: WATER
Ext Btch ID:	V067C04	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.46J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.32	10.00	93.2	70-120
4-BROMOFLUOROBENZENE	9.35	10.00	93.5	75-120
TOLUENE-D8	9.83	10.00	98.3	85-120
DIBROMOFLUOROMETHANE	9.94	10.00	99.4	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 16:32
Sample ID:	21-MW14-030513	Date Analyzed:	03/07/13 16:32
Lab Samp ID:	C013-11	Dilution Factor:	1
Lab File ID:	RCCD96	Matrix :	WATER
Ext Btch ID:	V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	1.0	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.68	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.46	10.00	94.6	70-120
4-BROMOFLUOROBENZENE	9.04	10.00	90.4	75-120
TOLUENE-D8	9.74	10.00	97.4	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/07/13 17:01
Sample ID:	21-IP17-030513	Date Analyzed:	03/07/13 17:01
Lab Samp ID:	C013-12	Dilution Factor:	1
Lab File ID:	RCC097	Matrix :	WATER
Ext Btch ID:	V067C05	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLDROETHENE	0.56	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.43J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.30J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.26	10.00	92.6	70-120
4-BROMOFLUOROBENZENE	8.92	10.00	89.2	75-120
TOLUENE-D8	9.86	10.00	98.6	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 18:33
Sample ID:	24-BB94-030513	Date Analyzed:	03/06/13 18:33
Lab Samp ID:	C013-13	Dilution Factor:	1
Lab File ID:	RCC073	Matrix :	WATER
Ext Btch ID:	V067C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.64	10.00	96.4	70-120
4-BROMOFLUOROBENZENE	9.27	10.00	92.7	75-120
TOLUENE-D8	9.87	10.00	98.7	85-120
DIBROMOFLUOROMETHANE	10.0	10.00	100	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/05/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 18:02
Sample ID:	030513-ER-02	Date Analyzed:	03/06/13 18:02
Lab Samp ID:	C013-14	Dilution Factor:	1
Lab File ID:	RCC072	Matrix	: WATER
Ext Btch ID:	V067C04	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	9.23	10.00	92.3	75-120
TOLUENE-D8	9.74	10.00	97.4	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/06/13
Batch No.	: 13C013	Date Extracted:	03/06/13 16:01
Sample ID:	MBLK1W	Date Analyzed:	03/06/13 16:01
Lab Samp ID:	V067C04B	Dilution Factor:	1
Lab File ID:	RCC068	Matrix :	WATER
Ext Btch ID:	V067C04	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.18	10.00	91.8	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C013
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V067C04B	V067C04L	V067C04C		
LAB FILE ID:	RCC068	RCC065	RCC066		
DATE EXTRACTED:	03/06/1316:01	03/06/1314:31	03/06/1315:00	DATE COLLECTED:	NA
DATE ANALYZED:	03/06/1316:01	03/06/1314:31	03/06/1315:00	DATE RECEIVED:	03/06/13
PREP. BATCH:	V067C04	V067C04	V067C04		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.09	91	10.0	9.90	99	9	70-125	30
Tetrachloroethene	ND	10.0	9.46	95	10.0	10.5	105	10	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.24	92	10.0	10.2	102	10	60-140	30
Trichloroethene	ND	10.0	10.0	100	10.0	10.8	108	8	70-125	30
Vinyl Chloride	ND	10.0	10.4	104	10.0	10.1	101	4	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.65	97	10.0	10.3	103	70-120
4-Bromofluorobenzene	10.0	9.16	92	10.0	9.44	94	75-120
Toluene-d8	10.0	9.76	98	10.0	9.81	98	85-120
Dibromofluoromethane	10.0	10.1	101	10.0	10.3	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/07/13
Batch No.	: 13C013	Date Extracted:	03/07/13 14:33
Sample ID:	MBLK2W	Date Analyzed:	03/07/13 14:33
Lab Samp ID:	V067C05B	Dilution Factor:	1
Lab File ID:	RCC092	Matrix	: WATER
Ext Btch ID:	V067C05	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.15	10.00	91.5	70-120
4-BROMOFLUOROBENZENE	9.36	10.00	93.6	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	9.76	10.00	97.6	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C013
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V067C05B	V067C05L	V067C05C		
LAB FILE ID:	RCC092	RCC089	RCC090		
DATE EXTRACTED:	03/07/1314:33	03/07/1313:03	03/07/1313:33	DATE COLLECTED:	NA
DATE ANALYZED:	03/07/1314:33	03/07/1313:03	03/07/1313:33	DATE RECEIVED:	03/07/13
PREP. BATCH:	V067C05	V067C05	V067C05		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.86	89	10.0	8.69	87	2	70-125	30
Tetrachloroethene	ND	10.0	9.05	91	10.0	8.95	90	1	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.64	86	10.0	8.81	88	2	60-140	30
Trichloroethene	ND	10.0	9.59	96	10.0	9.36	94	2	70-125	30
Vinyl Chloride	ND	10.0	9.47	95	10.0	9.82	98	4	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.15	91	10.0	9.89	99	70-120
4-Bromofluorobenzene	10.0	9.14	91	10.0	9.46	95	75-120
Toluene-d8	10.0	9.59	96	10.0	9.79	98	85-120
Dibromofluoromethane	10.0	10.0	100	10.0	10.2	102	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C013
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	21-IP19-030413				
LAB SAMP ID:	C013-10	C013-10M	C013-10S		
LAB FILE ID:	RCC074	RCC075	RCC076		
DATE EXTRACTED:	03/06/1319:04	03/06/1319:35	03/06/1320:07	DATE COLLECTED:	03/04/13
DATE ANALYZED:	03/06/1319:04	03/06/1319:35	03/06/1320:07	DATE RECEIVED:	03/06/13
PREP. BATCH:	V067C04	V067C04	V067C04		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.15	92	10.0	8.76	88	4	70-125	30
Tetrachloroethene	ND	10.0	9.22	92	10.0	9.21	92	0	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.98	90	10.0	8.71	87	3	60-140	30
Trichloroethene	ND	10.0	10.0	100	10.0	9.48	95	6	70-125	30
Vinyl Chloride	0.464J	10.0	10.5	100	10.0	10.3	98	2	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.29	93	10.0	9.36	94	70-120
4-Bromofluorobenzene	10.0	9.53	95	10.0	9.93	99	75-120
Toluene-d8	10.0	9.60	96	10.0	9.98	100	85-120
Dibromofluoromethane	10.0	9.99	100	10.0	9.96	100	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C013
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-BB94-030513				
LAB SAMP ID:	C013-13	C013-13M	C013-13S		
LAB FILE ID:	RCC073	RCC077	RCC078		
DATE EXTRACTED:	03/06/1318:33	03/06/1320:38	03/06/1321:09	DATE COLLECTED:	03/05/13
DATE ANALYZED:	03/06/1318:33	03/06/1320:38	03/06/1321:09	DATE RECEIVED:	03/06/13
PREP. BATCH:	V067C04	V067C04	V067C04		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.95	90	10.0	8.92	89	0	70-125	30
Tetrachloroethene	ND	10.0	9.04	90	10.0	9.05	91	0	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.75	87	10.0	8.71	87	0	60-140	30
Trichloroethene	ND	10.0	9.82	98	10.0	9.84	98	0	70-125	30
Vinyl Chloride	0.524	10.0	9.98	95	10.0	10.1	96	1	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.37	94	10.0	9.02	90	70-120
4-Bromofluorobenzene	10.0	9.34	93	10.0	9.00	90	75-120
Toluene-d8	10.0	9.78	98	10.0	9.68	97	85-120
Dibromofluoromethane	10.0	10.0	100	10.0	10.0	100	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C029**

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WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-27-2013
EMAX Batch No.: 13C029

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/08/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
21-MW01-030613	C029-01	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
030613-TB-01	C029-02	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW01B-030613	C029-03	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW12-030613	C029-04	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW08B-030613	C029-05	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW08A-030613	C029-06	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP07-030613	C029-07	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB40-030713	C029-08	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW06A-030713	C029-09	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW06B-030713	C029-10	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB63-030713	C029-11	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-38-030713	C029-12	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER PH-030613

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO: A083	
SAMPLER NAME: P. Hammer	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 13C029
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	21-MW01-030613	3/6/13	0945	3	X		W	10	X	
2	030613-TB-01	3/6/13	0900	3	X		W	10	X	
3	21-MW013-030613	3/6/13	1035	3	X		W	10	X	
4	21-MW12-030613	3/6/13	1153	3	X		W	10	X	
5	21-MW08B-030613	3/6/13	1315	3		X	W	10	X	
6	21-MW08A-030613	3/6/13	1430	3	X		W	10	X	
7	21-IP07-030613	3/6/13	1600	3	X		W	10	X	
8	24-BG40-030713	3/7/13	0847	3		X	W	10	X	
9	24-MW06A-030713	3/7/13	1008	3	X		W	10	X	
10	24-MW06B-030713	3/7/13	1048	3	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY: Trevet	TIME: 1500	COMPANY: Trevet
RELINQUISHED BY (Signature)	DATE: 3/7/13	RECEIVED BY (Signature)
COMPANY: TREVET	TIME: 1800	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 2.0 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 1

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER PH-030713

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: P. Hamner	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C029

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
11	24-BB63-030713	3/7/13	1328	3	X		W	10	X	
12	24-TN-38-030713	3/7/13	1422	3	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	3/7/13	
COMPANY: Trevet	TIME: 1500	COMPANY: TREVET
RELINQUISHED BY (Signature)	DATE: 3/7/13	RECEIVED BY (Signature)
COMPANY: TREVET	TIME: 1800	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 2.0 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 1

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 13 C029
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8022 3754 0987	Recipient I. BAKER
☐ EMAX Courier ☐ Client Delivery		Date 3/8/13 Time 0915

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☐ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, -6 °C but not frozen)	D ☑ Cooler 1 2.0 °C Cooler 1.	☐ Cooler 2 °C	☐ Cooler 3 °C	☐ Cooler 4 °C	☐ Cooler 5 °C
	☐ Cooler 6 °C	☐ Cooler 7 °C	☐ Cooler 8 °C	☐ Cooler 9 °C	☐ Cooler 10 °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 3/8/13 [signature] 3/8/13

SRF [signature] Date 3/8/13

PM HDB Date 3/11/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:15 AM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Results SDGs: 13C029, 13C030, 13C031 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C029, 13C030, 13C031, thanks.
Hanh

-----Original Message-----
From: Hanh Bui
Sent: Monday, March 11, 2013 2:01 PM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 21 &24)

Hi Jordy,
Please review the login samples received on 3/8, thanks.
Hanh

Hanh Bui

From: Jordana Scanlan [jscanlan@trevetinc.com]
Sent: Tuesday, March 12, 2013 8:17 AM
To: Hanh Bui
Cc: Gerald Tamashiro; Ye Myint
Subject: Re: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 6&12)

One more correction...
On sdg 13c029:
Please change 24-TN-38-030713 to 24-TW-38-030713. → C029-12

Thank you.

Sent from my iPhone

On Mar 11, 2013, at 2:02 PM, "Hanh Bui" <HDBui@emaxlabs.com> wrote:

> Hi Jordy,
> Please review the login samples received on 3/8, thanks.
> Hanh
>
> <13C029.pdf>
> <13C031.pdf>
> <13C030.pdf>

ORIGIN ID:JEMA (858) 578-8859
TREVET

9888 CARROLL CENTRE RD

SAN DIEGO, CA 921264579
UNITED STATES US

SHIP DATE: 08MAR13
ACTWGT: 26.4 LB
CAD: /OFFC1400
DIMS: 19x10x13 IN

BILL SENDER

Part # 156297-435 RIT 12/12

TO **SAMPLE RECEIVING**
EMAX
1835 W 205TH ST

13 C029
3/8/13
0915

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

1 of 3

TRK# 0200 8022 3754 0987

MASTER

MON - 11 MAR 10:30A
PRIORITY OVERNIGHT

WZ HHRA

1
Temp-2CR

90501
US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C029

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C029

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of twelve (12) water samples were received on 03/08/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO94C03L/C were all within QC limits.
Percent recoveries for VO94C05L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C029
Instrument ID : T-094

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V094C03B	1	NA	03/08/1310:43	03/08/1310:43	RCD040	RBD095	V094C03	Method Blank
LCS1W	V094C03L	1	NA	03/08/1308:34	03/08/1308:34	RCD037	RBD095	V094C03	Lab Control Sample (LCS)
LCD1W	V094C03C	1	NA	03/08/1309:08	03/08/1309:08	RCD038	RBD095	V094C03	LCS Duplicate
21-MW01-030613	C029-01	1	NA	03/08/1316:41	03/08/1316:41	RCD050	RBD095	V094C03	Field Sample
030613-TB-01	C029-02	1	NA	03/08/1317:17	03/08/1317:17	RCD051	RBD095	V094C03	Field Sample
21-MW01B-030613	C029-03	1	NA	03/08/1317:53	03/08/1317:53	RCD052	RBD095	V094C03	Field Sample
MBLK2W	V094C05B	1	NA	03/11/1309:59	03/11/1309:59	RCD075	RBD095	V094C05	Method Blank
LCS2W	V094C05L	1	NA	03/11/1308:16	03/11/1308:16	RCD072	RBD095	V094C05	Lab Control Sample (LCS)
LCD2W	V094C05C	1	NA	03/11/1308:51	03/11/1308:51	RCD073	RBD095	V094C05	LCS Duplicate
21-MW12-030613	C029-04R	1	NA	03/11/1311:16	03/11/1311:16	RCD077	RBD095	V094C05	Field Sample
21-MW08B-030613	C029-05R	1	NA	03/11/1311:53	03/11/1311:53	RCD078	RBD095	V094C05	Field Sample
21-MW08A-030613	C029-06R	1	NA	03/11/1312:28	03/11/1312:28	RCD079	RBD095	V094C05	Field Sample
21-IP07-030613	C029-07R	1	NA	03/11/1313:03	03/11/1313:03	RCD080	RBD095	V094C05	Field Sample
21-IP07-030613DL	C029-07T	25	NA	03/11/1313:39	03/11/1313:39	RCD081	RBD095	V094C05	Diluted Sample
24-BB40-030713	C029-08R	1	NA	03/11/1314:15	03/11/1314:15	RCD082	RBD095	V094C05	Field Sample
24-MW06A-030713	C029-09R	1	NA	03/11/1314:49	03/11/1314:49	RCD083	RBD095	V094C05	Field Sample
24-MW06B-030713	C029-10R	1	NA	03/11/1315:24	03/11/1315:24	RCD084	RBD095	V094C05	Field Sample
24-BB63-030713	C029-11R	1	NA	03/11/1316:00	03/11/1316:00	RCD085	RBD095	V094C05	Field Sample
24-TW-38-030713	C029-12R	1	NA	03/11/1316:36	03/11/1316:36	RCD086	RBD095	V094C05	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C029	Date Extracted: 03/08/13 16:41
Sample ID: 21-MW01-030613	Date Analyzed: 03/08/13 16:41
Lab Samp ID: C029-01	Dilution Factor: 1
Lab File ID: RCD050	Matrix : WATER
Ext Btch ID: V094C03	% Moisture : NA
Calib. Ref.: RBD095	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.92	10.00	99.2	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/08/13 17:17
Sample ID:	D30613-TB-01	Date Analyzed:	03/08/13 17:17
Lab Samp ID:	C029-02	Dilution Factor:	1
Lab File ID:	RCD051	Matrix :	WATER
Ext Btch ID:	V094C03	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/08/13 17:53
Sample ID:	21-MW01B-030613	Date Analyzed:	03/08/13 17:53
Lab Samp ID:	C029-03	Dilution Factor:	1
Lab File ID:	RCD052	Matrix :	WATER
Ext Btch ID:	VO94C03	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.97	10.00	99.7	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 11:16
Sample ID:	21-MW12-030613	Date Analyzed:	03/11/13 11:16
Lab Samp ID:	C029-04R	Dilution Factor:	1
Lab File ID:	RCD077	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.42	10.00	94.2	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C029	Date Extracted: 03/11/13 11:53
Sample ID: 21-MW08B-030613	Date Analyzed: 03/11/13 11:53
Lab Samp ID: C029-05R	Dilution Factor: 1
Lab File ID: RCD078	Matrix : WATER
Ext Btch ID: V094C05	% Moisture : NA
Calib. Ref.: RBD095	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.69	10.00	96.9	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 12:28
Sample ID:	21-MW08A-030613	Date Analyzed:	03/11/13 12:28
Lab Samp ID:	CD29-06R	Dilution Factor:	1
Lab File ID:	RCD079	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	1.2	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.36J	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.0	10.00	100	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C029	Date Extracted: 03/11/13 13:03 # 03/11/13 13:39
Sample ID: 21-IP07-030613	Date Analyzed: 03/11/13 13:03 # 03/11/13 13:39
Lab Samp ID: C029-07R #C029-07T	Dilution Factor: 1 # 25
Lab File ID: RCD080 #RCD081	Matrix : WATER
Ext Btch ID: V094C05	% Moisture : NA
Calib. Ref.: RBD095	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHENE	520	12	5.0
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	28	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
# VINYL CHLORIDE	810	12	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.83	10.00	98.3	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115
# 1,2-DICHLOROETHANE-D4	244	250.0	97.7	70-120
# 4-BROMOFLUOROBENZENE	262	250.0	105	75-120
# TOLUENE-D8	252	250.0	101	85-120
# DIBROMOFLUOROMETHANE	253	250.0	101	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C029	Date Extracted: 03/11/13 13:03
Sample ID: 21-IP07-030613	Date Analyzed: 03/11/13 13:03
Lab Samp ID: C029-07R	Dilution Factor: 1
Lab File ID: RCD080	Matrix : WATER
Ext Btch ID: V094C05	% Moisture : NA
Calib. Ref.: RBD095	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	360E	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	28	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	480E	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.83	10.00	98.3	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 13:39
Sample ID:	21-IP07-030613DL	Date Analyzed:	03/11/13 13:39
Lab Samp ID:	C029-07T	Dilution Factor:	25
Lab File ID:	RCD081	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	520	12	5.0
TETRACHLOROETHENE	ND	12	5.0
TRANS-1,2-DICHLOROETHENE	26	12	5.0
TRICHLOROETHENE	ND	12	5.0
VINYL CHLORIDE	810	12	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	244	250.0	97.7	70-120
4-BROMOFLUOROBENZENE	262	250.0	105	75-120
TOLUENE-D8	252	250.0	101	85-120
DIBROMOFLUOROMETHANE	253	250.0	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 14:15
Sample ID:	24-BB40-030713	Date Analyzed:	03/11/13 14:15
Lab Samp ID:	C029-08R	Dilution Factor:	1
Lab File ID:	RCD082	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.21J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.71	10.00	97.1	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 14:49
Sample ID:	24-MW06A-030713	Date Analyzed:	03/11/13 14:49
Lab Samp ID:	C029-09R	Dilution Factor:	1
Lab File ID:	RCD083	Matrix :	WATER
Ext Btch ID:	VO94C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.78	10.00	97.8	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C029	Date Extracted: 03/11/13 15:24
Sample ID: 24-MW06B-030713	Date Analyzed: 03/11/13 15:24
Lab Samp ID: C029-10R	Dilution Factor: 1
Lab File ID: RCD084	Matrix : WATER
Ext Btch ID: V094C05	% Moisture : NA
Calib. Ref.: RBD095	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUDROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.86	10.00	98.6	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 16:00
Sample ID:	24-BB63-030713	Date Analyzed:	03/11/13 16:00
Lab Samp ID:	C029-11R	Dilution Factor:	1
Lab File ID:	RCD085	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	3.4	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	5.5	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.87	10.00	98.7	70-120
4-BROMOFLUDROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/11/13 16:36
Sample ID:	24-TW-38-030713	Date Analyzed:	03/11/13 16:36
Lab Samp ID:	C029-12R	Dilution Factor:	1
Lab File ID:	RCD086	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C029	Date Extracted:	03/08/13 10:43
Sample ID:	MBLK1W	Date Analyzed:	03/08/13 10:43
Lab Samp ID:	V094C03B	Dilution Factor:	1
Lab File ID:	RCD040	Matrix :	WATER
Ext Btch ID:	V094C03	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.86	10.00	98.6	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C029
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V094C03B	V094C03L	V094C03C		
LAB FILE ID:	RCD040	RCD037	RCD038		
DATE EXTRACTED:	03/08/1310:43	03/08/1308:34	03/08/1309:08	DATE COLLECTED:	NA
DATE ANALYZED:	03/08/1310:43	03/08/1308:34	03/08/1309:08	DATE RECEIVED:	03/08/13
PREP. BATCH:	V094C03	V094C03	V094C03		
CALIB. REF:	RBD095	RBD095	RBD095		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.45	94	10.0	9.50	95	1	70-125	30
Tetrachloroethene	ND	10.0	9.93	99	10.0	9.87	99	1	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.44	94	10.0	9.56	96	1	60-140	30
Trichloroethene	ND	10.0	10.5	105	10.0	10.7	107	2	70-125	30
Vinyl Chloride	ND	10.0	11.0	110	10.0	10.4	104	5	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.4	104	70-120
4-Bromofluorobenzene	10.0	10.6	106	10.0	10.3	103	75-120
Toluene-d8	10.0	9.74	97	10.0	9.74	97	85-120
Dibromofluoromethane	10.0	10.6	106	10.0	10.5	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/11/13
Batch No.	: 13C029	Date Extracted:	03/11/13 09:59
Sample ID:	MBLK2W	Date Analyzed:	03/11/13 09:59
Lab Samp ID:	V094CD5B	Dilution Factor:	1
Lab File ID:	RCD075	Matrix :	WATER
Ext Btch ID:	V094C05	% Moisture :	NA
Calib. Ref.:	RBD095	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.0	10.00	100	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C029
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V094C05B	V094C05L	V094C05C		
LAB FILE ID:	RCD075	RCD072	RCD073		
DATE EXTRACTED:	03/11/1309:59	03/11/1308:16	03/11/1308:51	DATE COLLECTED:	NA
DATE ANALYZED:	03/11/1309:59	03/11/1308:16	03/11/1308:51	DATE RECEIVED:	03/11/13
PREP. BATCH:	V094C05	V094C05	V094C05		
CALIB. REF:	RBD095	RBD095	RBD095		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.39	84	10.0	8.46	85	1	70-125	30
Tetrachloroethene	ND	10.0	8.84	88	10.0	9.32	93	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.38	84	10.0	8.54	85	2	60-140	30
Trichloroethene	ND	10.0	9.35	93	10.0	9.51	95	2	70-125	30
Vinyl Chloride	ND	10.0	9.58	96	10.0	9.72	97	1	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.2	102	10.0	10.0	100	70-120
4-Bromofluorobenzene	10.0	9.98	100	10.0	10.4	104	75-120
Toluene-d8	10.0	9.97	100	10.0	9.89	99	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.2	102	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C030**

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GC/MS-VOA	METHOD 5030B/8260B	2000 – 2130
GC/MS-SVOA	**	3000 –
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-27-2013
EMAX Batch No.: 13C030

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/08/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
030613-TB-02	C030-01	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP10-030613	C030-02	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP05-030613	C030-03	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP12-030613	C030-04	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP18-030613	C030-05	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW09A-030613	C030-06	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW09A-030613-D	C030-07	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-46-030613	C030-08	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB42-030713	C030-09	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-32-030713	C030-10	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW16-030713	C030-11	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW10C-030713	C030-12	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW3A-2-030713	C030-13	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MWS-030713	C030-14	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW30-030713	C030-15	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER ~~TBS 3/6/13~~ 585 030613

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: John B. Spency	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 13C030
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	030613-TB-02	3/6/13	700	3	X		W	10 DAY	X	Trip Blank
2	21-IP10-030613	3/6/13	910	3		X	W	10 DAY	X	
3	21-IP05-030613	3/6/13	1130	3	X		W	10 DAY	X	
4	21-IP12-030613	3/6/13	1223	3	X		W	10 DAY	X	
5	21-IP18-030613	3/6/13	1435	3	X		W	10 DAY	X	
6	21-MW09A-030613	3/6/13	1540	3	X		W	10 DAY	X	
7	21-MW09A-030613-D	3/6/13	1545	3	X		W	10 DAY	X	
8	24-TW46-030613	3/6/13	1740	3	X		W	10 DAY	X	
	~~24-~~									~~TBS~~ 3/7/13
9	24-BB42-030713	3/7/13	0910	3	X		W	10 DAY	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	3/7/13	[signature]
COMPANY: TREVET	TIME: 1800	COMPANY: EMAX 3/8/13 09:15
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.5 SAMPLE CONDITION: (INTACT) BROKEN
COOLER SEAL: (INTACT) BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 2

1 of 1

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER ~~TBS-3/7/13~~ TBS 030713

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: John B. Spaney	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C030

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
10	24-TW-32-030713	3/7/13	1020	3		X	W	10 DAY	X	
11	24-IWIC-030713	3/7/13	1120	3	X		W	10 DAY	X	
12	24-MW10C-030713	3/7/13	1325	3	X		W	10 DAY	X	
13	24-MW03A-030713	3/7/13	1430	3	X		W	10 DAY	X	
14	24-MW5-030713	3/7/13	1520	3	X		W	10 DAY	X	
15	24-EW30-030713	3/7/13	1705	3	X		W	10 DAY	X	

3/7/13

RELINQUISHED BY (Signature): [signature]	DATE: 3/7/13	RECEIVED BY (Signature): [signature]	
COMPANY: TREVET	TIME: 1800	COMPANY: EMAX 3/8/13	09:15
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	
COMPANY	TIME	COMPANY	
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	
COMPANY	TIME	COMPANY	

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 2.6 SAMPLE CONDITION: (INTACT) BROKEN
COOLER SEAL: (INTACT) BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 3

1602

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 13 C030
☑ Fedex ☐ UPS ☐ GSO ☐ Others	~~8022 3751 8987~~ 7955 5251 8035	Recipient J. BATES
☐ EMAX Courier ☐ Client Delivery		Date 3/8/13 Time 0915

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☐ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container ☑ Cooler ☐ Box ☐ Other
Condition ☑ Custody Seal ☑ Intact ☐ Damaged
Packaging ☑ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☐ Plastic Bags
Temperatures (Cool, =6 °C but not frozen) D ☑ Cooler 1 2.6 °C ☑ Cooler 2 3.5 °C ☐ Cooler 3 ____ °C ☐ Cooler 4 ____ °C ☐ Cooler 5 ____ °C
☐ Cooler 6 ____ °C ☐ Cooler 7 ____ °C ☐ Cooler 8 ____ °C ☐ Cooler 9 ____ °C ☐ Cooler 10 ____ °C

Thermometer: *A - S/N 101541371* *B - S/N 101541382* *C - S/N 122091701* *D - S/N 122091758*

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code
13	37, 38	B3	Label: 24-MW03A 030712	R2

☐ **Continue to next page.**

REVIEWS

Sample Labeling ____ Date 3/8/13 ____ 3/8/13

SRF ____ Date 3/8/13

PM ____ Date 3/8/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG ____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:15 AM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Results SDGs: 13C029, 13C030, 13C031 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C029, 13C030, 13C031, thanks.
Hanh

-----Original Message-----
From: Hanh Bui
Sent: Monday, March 11, 2013 2:01 PM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 21 &24)

Hi Jordy,
Please review the login samples received on 3/8, thanks.
Hanh

Hanh Bui

From: Jordana Scanlan [jscanlan@trevetinc.com]
Sent: Monday, March 11, 2013 7:14 PM
To: Hanh Bui
Cc: Gerald Tamashiro; Ye Myint
Subject: Re: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 6&12)

Hi hanh,
Please revise the following Ids:

13c031
24-TW14-030613 should read 24-TW-14-030613 → C031-04

24-TW16-030613 should be 24-TW-16-030613 → C031-05

24-TW23-030~~6~~13 (07) should be 24-TW-23-030~~6~~13 (07) → C031-08

On sdg 13c030:
24-TW46-030613 should be 24-TW-46-03061~~4~~ (13) → C030-08

On sdg 13c029:
24-TW38-030713 should be 24-TW-38-030713 → C029-12

Thanks!
Sent from my iPhone

On Mar 11, 2013, at 2:02 PM, "Hanh Bui" <HDBui@emaxlabs.com> wrote:

> Hi Jordy,
> Please review the login samples received on 3/8, thanks.
> Hanh
>
> <13C029.pdf>
> <13C031.pdf>
> <13C030.pdf>

Hanh Bui

From: Ye Myint
Sent: Monday, March 11, 2013 7:16 PM
To: 'Patrick Hamner'
Cc: Jordana Scanlan; Gerald Tamashiro; Hanh Bui
Subject: RE: Treasure Island IR Site 24 sample ID change

Thanks, Patrick

It's in our SDG: 13C030. We will make the correction on the ID as requested.

Ye

310-618-8889 x121

From: Patrick Hamner [mailto:PHamner@trevetinc.com]
Sent: Monday, March 11, 2013 6:58 PM
To: Ye Myint
Cc: Jordana Scanlan; Gerald Tamashiro; Hanh Bui
Subject: RE: Treasure Island IR Site 24 sample ID change

The sample was collected on 3/7/13 at 1430.

We will be sampling Monday thru Thursday this week. Will probably ship Tuesday and Thursday.

Patrick

From: Ye Myint [mailto:YMyint@emaxlabs.com]
Sent: Monday, March 11, 2013 5:29 PM
To: Patrick Hamner
Cc: Jordana Scanlan; Gerald Tamashiro; Hanh Bui
Subject: RE: Treasure Island IR Site 24 sample ID change

Hi Patrick,

We received 3 coolers on Friday, last week. I'm unable to find sample 24-MW03A-030713 from the list of samples we received on 03/08/13. Could you please provide me the collection date and time to track this ID to make changes as you requested below.

Are you sampling all week this week at Treasure Island?

Thanks.

Ye

310-618-8889 x121

From: Patrick Hamner [mailto:PHamner@trevetinc.com]
Sent: Monday, March 11, 2013 12:24 PM
To: Ye Myint
Cc: Jordana Scanlan; Gerald Tamashiro
Subject: Treasure Island IR Site 24 sample ID change

Hi Ye,

You should have received a COC on Friday 3/8/13 from Brad Sperry. He misidentified a sample and I'd like to get it corrected before the problem propagates itself. Please rename sample "24-MW03A-030713" to "24-MW3A-2-030713".

C030-13

Thanks,

Patrick

Patrick Hamner, P.G.
Trevet Environmental Consultants
9888 Carroll Centre Road, Suite 228
San Diego, California 92126
(858) 578-8859 x117 office
(858) 740-6686 mobile
phamner@trevetinc.com

13C030

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8022 3754 0987

1 From

Date 3/7/13 [redacted]

Sender's Name Gerald Tamashiro Phone 858 578-8859

Company Trevit

Address 9555 Carroll centre Rd Ste 228 Dept./Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference A083

3 To

Recipient's Name Sample Receiving Phone 310 618-8889

Company Emax

Address 1835 W. 205th St Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8022 3754 0987

Cooler 3

2.6°

[redacted]

4 Express Package Service [redacted]

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☒ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Chec

Obtain recip. Acct. No. ☐

[redacted]

Total Packages 3 Total Weight 87 lbs. [redacted] Credit Card Auth.

*Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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1808

ORIGIN ID:JEMA (858) 578-8859
TREVET

9888 CARROLL CENTRE RD

SAN DIEGO, CA 921264579
UNITED STATES US

SHIP DATE: 08MAR13
ACTWGT: 36.9 LB
CAD: /OFFC1400
DIMS: 24x10x13 IN

BILL SENDER

TO **SAMPLE RECEIVING**
EMAX
1835 W 205TH ST

13 C032

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx
Express

3 of 3
MPS# 0681 7955 5251 9035
Mstr# 8022 3754 0987 0200

MON - 11 MAR 10:30A
PRIORITY OVERNIGHT

WZ HHRA

90501
CA-US **LAX**

Part # 156297-435 RIT 12/12

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C030

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C030

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of fifteen (15) water samples were received on 03/08/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO01C10X/Y were all within QC limits.
Percent recoveries for VO01C12L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C030
Instrument ID : T-001

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V001C10B	1	NA	03/08/1317:41	03/08/1317:41	RCV140	RBV110	V001C10	Method Blank
LCS1W	V001C10X	1	NA	03/08/1315:20	03/08/1315:20	RCV135	RBV110	V001C10	Lab Control Sample (LCS)
LCD1W	V001C10Y	1	NA	03/08/1317:13	03/08/1317:13	RCV139	RBV110	V001C10	LCS Duplicate
030613-TB-02	C030-01	1	NA	03/08/1318:41	03/08/1318:41	RCV142	RBV110	V001C10	Field Sample
21-IP10-030613	C030-02	1	NA	03/08/1320:05	03/08/1320:05	RCV145	RBV110	V001C10	Field Sample
21-IP05-030613	C030-03	1	NA	03/08/1320:33	03/08/1320:33	RCV146	RBV110	V001C10	Field Sample
21-IP12-030613	C030-04	1	NA	03/08/1321:01	03/08/1321:01	RCV147	RBV110	V001C10	Field Sample
21-IP18-030613	C030-05	1	NA	03/08/1321:30	03/08/1321:30	RCV148	RBV110	V001C10	Field Sample
21-MW09A-030613	C030-06	1	NA	03/08/1321:58	03/08/1321:58	RCV149	RBV110	V001C10	Field Sample
21-MW09A-030613-D	C030-07	1	NA	03/08/1322:26	03/08/1322:26	RCV150	RBV110	V001C10	Field Sample
24-TW-46-030613	C030-08	1	NA	03/08/1322:54	03/08/1322:54	RCV151	RBV110	V001C10	Field Sample
24-BB42-030713	C030-09	1	NA	03/08/1323:22	03/08/1323:22	RCV152	RBV110	V001C10	Field Sample
24-TW-32-030713	C030-10	1	NA	03/08/1323:50	03/08/1323:50	RCV153	RBV110	V001C10	Field Sample
24-IW16-030713	C030-11	1	NA	03/09/1300:19	03/09/1300:19	RCV154	RBV110	V001C10	Field Sample
MBLK2W	V001C12B	1	NA	03/11/1317:24	03/11/1317:24	RCV167	RBV110	V001C12	Method Blank
LCS2W	V001C12L	1	NA	03/11/1314:22	03/11/1314:22	RCV162	RBV110	V001C12	Lab Control Sample (LCS)
LCD2W	V001C12C	1	NA	03/11/1314:50	03/11/1314:50	RCV163	RBV110	V001C12	LCS Duplicate
24-MW10C-030713	C030-12	1	NA	03/11/1317:55	03/11/1317:55	RCV168	RBV110	V001C12	Field Sample
24-MW3A-2-030713	C030-13	1	NA	03/11/1318:23	03/11/1318:23	RCV169	RBV110	V001C12	Field Sample
24-MWS-030713	C030-14	1	NA	03/11/1318:51	03/11/1318:51	RCV170	RBV110	V001C12	Field Sample
24-EW30-030713	C030-15	1	NA	03/11/1319:20	03/11/1319:20	RCV171	RBV110	V001C12	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/08/13 18:41
Sample ID: 030613-TB-02	Date Analyzed: 03/08/13 18:41
Lab Samp ID: C030-01	Dilution Factor: 1
Lab File ID: RCV142	Matrix : WATER
Ext Btch ID: V001C10	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.44	10.00	94.4	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 20:05
Sample ID:	21-IP10-030613	Date Analyzed:	03/08/13 20:05
Lab Samp ID:	C030-02	Dilution Factor:	1
Lab File ID:	RCV145	Matrix :	WATER
Ext Btch ID:	V001C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.1	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.35J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.42J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.79	10.00	97.9	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.80	10.00	98.0	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/08/13 20:33
Sample ID: 21-IP05-030613	Date Analyzed: 03/08/13 20:33
Lab Samp ID: C030-03	Dilution Factor: 1
Lab File ID: RCV146	Matrix : WATER
Ext Btch ID: V001C10	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	2.7	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.21J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.0	10.00	100	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.53	10.00	95.3	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 21:01
Sample ID:	21-IP12-030613	Date Analyzed:	03/08/13 21:01
Lab Samp ID:	C030-04	Dilution Factor:	1
Lab File ID:	RCV147	Matrix :	WATER
Ext Btch ID:	VO01C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.53	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.77	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	3.6	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.91	10.00	99.1	75-120
TOLUENE-D8	9.47	10.00	94.7	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 21:30
Sample ID:	21-IP18-030613	Date Analyzed:	03/08/13 21:30
Lab Samp ID:	C030-05	Dilution Factor:	1
Lab File ID:	RCV148	Matrix :	WATER
Ext Btch ID:	VO01C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	2.4	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	2.6	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.57	10.00	95.7	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/08/13 21:58
Sample ID: 21-MW09A-030613	Date Analyzed: 03/08/13 21:58
Lab Samp ID: C030-06	Dilution Factor: 1
Lab File ID: RCV149	Matrix : WATER
Ext Btch ID: V001C10	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	20	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.7	0.50	0.20
TRICHLOROETHENE	3.0	0.50	0.20
VINYL CHLORIDE	6.2	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	9.98	10.00	99.8	75-120
TOLUENE-D8	9.60	10.00	96.0	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/08/13 22:26
Sample ID: 21-MW09A-030613-D	Date Analyzed: 03/08/13 22:26
Lab Samp ID: C030-D7	Dilution Factor: 1
Lab File ID: RCV150	Matrix : WATER
Ext Btch ID: V001C10	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	19	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.7	0.50	0.20
TRICHLOROETHENE	3.2	0.50	0.20
VINYL CHLORIDE	5.6	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.50	10.00	95.0	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/08/13 22:54
Sample ID: 24-TW-46-030613	Date Analyzed: 03/08/13 22:54
Lab Samp ID: C030-08	Dilution Factor: 1
Lab File ID: RCV151	Matrix : WATER
Ext Btch ID: V001C10	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.5	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	9.80	10.00	98.0	75-120
TOLUENE-D8	9.70	10.00	97.0	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 23:22
Sample ID:	24-BB42-030713	Date Analyzed:	03/08/13 23:22
Lab Samp ID:	C030-09	Dilution Factor:	1
Lab File ID:	RCV152	Matrix :	WATER
Ext Btch ID:	V001C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.32J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.0	10.00	100	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.54	10.00	95.4	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 23:50
Sample ID:	24-TW-32-030713	Date Analyzed:	03/08/13 23:50
Lab Samp ID:	C030-10	Dilution Factor:	1
Lab File ID:	RCV153	Matrix :	WATER
Ext Btch ID:	V001C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.51	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.37J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.66	10.00	96.6	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/09/13 00:19
Sample ID:	24-IW16-030713	Date Analyzed:	03/09/13 00:19
Lab Samp ID:	C030-11	Dilution Factor:	1
Lab File ID:	RCV154	Matrix :	WATER
Ext Btch ID:	V001C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.32J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.41	10.00	94.1	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/11/13 17:55
Sample ID: 24-MW10C-030713	Date Analyzed: 03/11/13 17:55
Lab Samp ID: C030-12	Dilution Factor: 1
Lab File ID: RCV168	Matrix : WATER
Ext Btch ID: V001C12	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.94	10.00	99.4	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.45	10.00	94.5	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/11/13 18:23
Sample ID: 24-MW3A-2-030713	Date Analyzed: 03/11/13 18:23
Lab Samp ID: CD30-13	Dilution Factor: 1
Lab File ID: RCV169	Matrix : WATER
Ext Btch ID: V001C12	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	9.97	10.00	99.7	75-120
TOLUENE-D8	9.76	10.00	97.6	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/11/13 18:51
Sample ID: 24-MWS-030713	Date Analyzed: 03/11/13 18:51
Lab Samp ID: C030-14	Dilution Factor: 1
Lab File ID: RCV170	Matrix : WATER
Ext Btch ID: VO01C12	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.70	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.27J	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	9.88	10.00	98.8	75-120
TOLUENE-D8	9.36	10.00	93.6	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C030	Date Extracted: 03/11/13 19:20
Sample ID: 24-EW30-030713	Date Analyzed: 03/11/13 19:20
Lab Samp ID: C030-15	Dilution Factor: 1
Lab File ID: RCV171	Matrix : WATER
Ext Btch ID: V001C12	% Moisture : NA
Calib. Ref.: RBV110	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.20J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.34J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	9.86	10.00	98.6	75-120
TOLUENE-D8	9.32	10.00	93.2	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C030	Date Extracted:	03/08/13 17:41
Sample ID:	MBLK1W	Date Analyzed:	03/08/13 17:41
Lab Samp ID:	V001C10B	Dilution Factor:	1
Lab File ID:	RCV140	Matrix :	WATER
Ext Btch ID:	V001C10	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	9.83	10.00	98.3	75-120
TOLUENE-D8	9.61	10.00	96.1	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C030
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V001C10B	V001C10X	V001C10Y		
LAB FILE ID:	RCV140	RCV135	RCV139		
DATE EXTRACTED:	03/08/1317:41	03/08/1315:20	03/08/1317:13	DATE COLLECTED:	NA
DATE ANALYZED:	03/08/1317:41	03/08/1315:20	03/08/1317:13	DATE RECEIVED:	03/08/13
PREP. BATCH:	V001C10	V001C10	V001C10		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.57	96	10.0	9.69	97	1	70-125	30
Tetrachloroethene	ND	10.0	8.64	86	10.0	8.32	83	4	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.73	97	10.0	9.58	96	2	60-140	30
Trichloroethene	ND	10.0	9.87	99	10.0	9.65	96	2	70-125	30
Vinyl Chloride	ND	10.0	10.9	109	10.0	10.6	106	3	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.8	108	70-120
4-Bromofluorobenzene	10.0	9.99	100	10.0	10.3	103	75-120
Toluene-d8	10.0	9.46	95	10.0	9.39	94	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.6	106	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/11/13
Batch No.	: 13C030	Date Extracted:	03/11/13 17:24
Sample ID:	MBLK2W	Date Analyzed:	03/11/13 17:24
Lab Samp ID:	V001C12B	Dilution Factor:	1
Lab File ID:	RCV167	Matrix :	WATER
Ext Btch ID:	V001C12	% Moisture :	NA
Calib. Ref.:	RBV110	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.65	10.00	96.5	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.67	10.00	96.7	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C030
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V001C12B	V001C12L	V001C12C		
LAB FILE ID:	RCV167	RCV162	RCV163		
DATE EXTRACTED:	03/11/1317:24	03/11/1314:22	03/11/1314:50	DATE COLLECTED:	NA
DATE ANALYZED:	03/11/1317:24	03/11/1314:22	03/11/1314:50	DATE RECEIVED:	03/11/13
PREP. BATCH:	V001C12	V001C12	V001C12		
CALIB. REF:	RBV110	RBV110	RBV110		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.42	94	10.0	10.2	102	8	70-125	30
Tetrachloroethene	ND	10.0	8.31	83	10.0	9.13	91	9	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.39	94	10.0	10.4	104	10	60-140	30
Trichloroethene	ND	10.0	9.35	93	10.0	10.2	102	8	70-125	30
Vinyl Chloride	ND	10.0	9.55	96	10.0	10.0	100	5	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.1	101	10.0	9.52	95	70-120
4-Bromofluorobenzene	10.0	10.4	104	10.0	10.4	104	75-120
Toluene-d8	10.0	9.58	96	10.0	9.58	96	85-120
Dibromofluoromethane	10.0	10.4	104	10.0	10.2	102	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C031**

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GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-27-2013
EMAX Batch No.: 13C031

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/08/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
030613-TB-04	C031-01	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB76-D30613	C031-02	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB78-030613	C031-03	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-14-030613	C031-04	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-16-030613	C031-05	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW07C-030613	C031-06	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW07B-030613	C031-07	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-23-030713	C031-08	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW11-030713	C031-09	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW07A-030713	C031-10	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW6-030713	C031-11	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
030713-ER-04	C031-12	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW04-030713	C031-13	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW14-030713	C031-14	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB78-030613MS	C031-03M	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB78-030613MSD	C031-03S	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-23-030713MS	C031-08M	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-23-030713MSD	C031-08S	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER JM-030613

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: Justin Mercer	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 130031
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	030613-TB-04	3/6/13	0830	3	X		W	10 day	X	Trip blank
2	24-BB76-030613	3/6/13	1200	3		X	W	10 day	X	24-BB76
3	24-BB78-030613	3/6/13	1245	9	X		W	10 day	X	24-BB78 MS/MSD
4	24-TW14-030613	3/6/13	1440	3	X		W	10 day	X	24-TW14
5	24-TW16-030613	3/6/13	1615	3	X		W	10 day	X	24-TW16
6	24-MW07C-030613	3/6/13	1715	3	X		W	10 day	X	24-MW07C
7	24-MW07B-030613	3/6/13	1745	3	X		W	10 day	X	24-MW07B
8	24-TW23-030713	3/7/13	0910	9	X		W	10 day	X	24-TW23
9	24-IW11-030713	3/7/13	1010	3	X		W	10 day	X	24-IW11
10	24-MW07A-030713	3/7/13	1100	3	X		W	10 day	X	24-MW07A

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	3/7/13	[illegible]
COMPANY: Trevet	TIME: 1500	COMPANY: TREVET
RELINQUISHED BY (Signature)	DATE: 3/7/13	RECEIVED BY (Signature): Olivia [illegible]
COMPANY: TREVET	TIME: 1600	COMPANY: EMAX 3/8/13 08:15
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.5°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 2

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER JM-030613

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: Justin Mercer	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 130031
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
11	24-IW6-030713	3/7/13	1330	3	X		W	10 day	X	24-IW06
12	030713-ER-04	3/7/13	1405	3	X		W	10 day	X	Equipment rinsate
13	24-MW04-030713	3/7/13	1415	3		X	W	10 day	X	24-MW04
14	24-IW14-03713	3/7/13	1605	3	X		W	10 DAY	X	

3/7/13

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	3/7/13	
COMPANY: Trevet	TIME: 1500	COMPANY: TREVET
RELINQUISHED BY (Signature)	DATE: 3/7/13	RECEIVED BY (Signature): Cindie Olg 3/8/13
COMPANY	TIME: 600	COMPANY: CMAL 09:15
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 2.6 C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

Cooler 3

2062

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	
☑ Fedex ☐ UPS ☐ GSO ☐ Others	~~8022 3984 0487~~ 3-8-13	ECN 13 C031
☐ EMAX Courier ☐ Client Delivery	7955 5251 9035	Recipient I. Bates
	(263 - 5013)	Date 3/8/13 Time 0915

COC Inspection

☐ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☐ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic Bag
Temperatures (Cool, =6 °C but not frozen)	D ☑ Cooler 1 2.6 °C	☑ Cooler 2 3.5 °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code
8		H1		R5, R7

☐ **Continue to next page.**

REVIEWS

Sample Labeling: [signature] Date 3/8/13 [signature] 3/8/13

SRF [signature] Date 3/8/13

PM [signature] Date 3/11/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	Received after 24 hrs No request for MS/MSD

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC
R7	Analyze MS/MSD

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:15 AM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Results SDGs: 13C029, 13C030, 13C031 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C029, 13C030, 13C031, thanks.
Hanh

-----Original Message-----
From: Hanh Bui
Sent: Monday, March 11, 2013 2:01 PM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 21 &24)

Hi Jordy,
Please review the login samples received on 3/8, thanks.
Hanh

Hanh Bui

From: Jordana Scanlan [jscanlan@trevetinc.com]
Sent: Monday, March 11, 2013 7:14 PM
To: Hanh Bui
Cc: Gerald Tamashiro; Ye Myint
Subject: Re: Samples Login SDGS: 13C029, 13C030, 13C031 (TI 6&12)

Hi hanh,
Please revise the following Ids:

13c031
24-TW14-030613 should read 24-TW-14-030613 → C031-04

24-TW16-030613 should be 24-TW-16-030613 → C031-05

24-TW23-030~~6~~13 (07) should be 24-TW-23-030~~6~~13 (07) → C031-08

On sdg 13c030:
24-TW46-030613 should be 24-TW-46-030~~6~~13 → C030-08

On sdg 13c029:
24-TW38-030713 should be 24-TW-38-030713 → C029-12

Thanks!
Sent from my iPhone

On Mar 11, 2013, at 2:02 PM, "Hanh Bui" <HDBui@emaxlabs.com> wrote:

> Hi Jordy,
> Please review the login samples received on 3/8, thanks.
> Hanh
>
> <13C029.pdf>
> <13C031.pdf>
> <13C030.pdf>

13C030

FedEx Express — NEW Package US Airbill

FedEx Tracking Number 8022 3754 0987

Form ID No. 0200

TLM

1 From

Date

Sender's Name — Phone

Company

Address — Dept./Floor/Suite/Room

City — State — ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name — Phone

Company

Address — Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City — State — ZIP

☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8022 3754 0987

Code: 3

2.6

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked

☒ No

☐ Yes — As per attached Shipper's Declaration

☐ Yes — Shipper's Declaration not required.

☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip. acct. No. ☐

☒ Sender — Acct. No. in Section 1 will be billed.

☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Chec

Total Packages — Total Weight ____ lbs.

Credit Card Auth.

*Your liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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1065

ORIGIN ID:JEMA (858) 578-8859
TREVET

9888 CARROLL CENTRE RD

SAN DIEGO, CA 921264579
UNITED STATES US

SHIP DATE: 08MAR13
ACTWGT: 36.9 LB
CAD: /OFFC1400
DIMS: 24x10x13 IN

BILL SENDER

Part # 156297-435 Rev 12/12

TO **SAMPLE RECEIVING**
EMAX
1835 W 205TH ST

13 C032

TORRANCE CA 90501
(310) 618-8889 REF:
INV: DEPT:
PO:

FedEx Express

3 of 3
MPS# 0681 7955 5251 9035
Mstr# 8022 3754 0987 0200

MON - 11 MAR 10:30A
PRIORITY OVERNIGHT

WZ HHRA

90501
CA-US **LAX**

Order 2
3.50

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C031

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C031

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of fourteen (14) water samples were received on 03/08/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for V067C06L/C were all within QC limits.
Percent recoveries for V067C07L/C were all within QC limits.

Matrix QC Sample
Two (2) sets of MS/MSD were analyzed with the samples in this SDG.
Percent recoveries for C031-03M/S were within project QC limits.
Percent recoveries for C031-08M/S were within project QC limits.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C031
Instrument ID : T-067

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V067C06B	1	NA	03/08/1314:35	03/08/1314:35	RCC115	RCC051	V067C06	Method Blank
LCS1W	V067C06L	1	NA	03/08/1313:02	03/08/1313:02	RCC112	RCC051	V067C06	Lab Control Sample (LCS)
LCD1W	V067C06C	1	NA	03/08/1313:33	03/08/1313:33	RCC113	RCC051	V067C06	LCS Duplicate
030613-TB-04	C031-01	1	NA	03/08/1315:05	03/08/1315:05	RCC116	RCC051	V067C06	Field Sample
030713-ER-04	C031-12	1	NA	03/08/1315:36	03/08/1315:36	RCC117	RCC051	V067C06	Field Sample
24-BB78-030613	C031-03	1	NA	03/08/1316:07	03/08/1316:07	RCC118	RCC051	V067C06	Field Sample
24-TW-23-030713	C031-08	1	NA	03/08/1316:37	03/08/1316:37	RCC119	RCC051	V067C06	Field Sample
24-TW-23-030713MS	C031-08M	1	NA	03/08/1317:08	03/08/1317:08	RCC120	RCC051	V067C06	Matrix Spike Sample (MS)
24-TW-23-030713MSD	C031-08S	1	NA	03/08/1317:39	03/08/1317:39	RCC121	RCC051	V067C06	MS Duplicate (MSD)
24-BB78-030613MS	C031-03M	1	NA	03/08/1318:10	03/08/1318:10	RCC122	RCC051	V067C06	Matrix Spike Sample (MS)
24-BB78-030613MSD	C031-03S	1	NA	03/08/1318:41	03/08/1318:41	RCC123	RCC051	V067C06	MS Duplicate (MSD)
24-BB76-030613	C031-02	1	NA	03/08/1319:43	03/08/1319:43	RCC125	RCC051	V067C06	Field Sample
24-TW-14-030613	C031-04	1	NA	03/08/1320:14	03/08/1320:14	RCC126	RCC051	V067C06	Field Sample
24-TW-16-030613	C031-05	1	NA	03/08/1320:44	03/08/1320:44	RCC127	RCC051	V067C06	Field Sample
24-MW07B-030613	C031-07	1	NA	03/08/1321:45	03/08/1321:45	RCC129	RCC051	V067C06	Field Sample
24-IW11-030713	C031-09	1	NA	03/08/1322:16	03/08/1322:16	RCC130	RCC051	V067C06	Field Sample
24-MW07A-030713	C031-10	1	NA	03/08/1322:47	03/08/1322:47	RCC131	RCC051	V067C06	Field Sample
24-IW6-030713	C031-11	1	NA	03/08/1323:18	03/08/1323:18	RCC132	RCC051	V067C06	Field Sample
24-MW04-030713	C031-13	1	NA	03/08/1323:48	03/08/1323:48	RCC133	RCC051	V067C06	Field Sample
MBLK2W	V067C07B	1	NA	03/11/1319:12	03/11/1319:12	RCC141	RCC051	V067C07	Method Blank
LCS2W	V067C07L	1	NA	03/11/1317:40	03/11/1317:40	RCC138	RCC051	V067C07	Lab Control Sample (LCS)
LCD2W	V067C07C	1	NA	03/11/1318:10	03/11/1318:10	RCC139	RCC051	V067C07	LCS Duplicate
24-MW07C-030613	C031-06R	1	NA	03/11/1320:44	03/11/1320:44	RCC144	RCC051	V067C07	Field Sample
24-IW14-030713	C031-14	1	NA	03/11/1323:16	03/11/1323:16	RCC149	RCC051	V067C07	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 15:05
Sample ID:	030613-TB-04	Date Analyzed:	03/08/13 15:05
Lab Samp ID:	C031-01	Dilution Factor:	1
Lab File ID:	RCC116	Matrix	: WATER
Ext Btch ID:	V067C06	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.12	10.00	81.2	70-120
4-BROMOFLUOROBENZENE	8.60	10.00	86.0	75-120
TOLUENE-D8	9.82	10.00	98.2	85-120
DIBROMOFLUOROMETHANE	9.66	10.00	96.6	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 19:43
Sample ID:	24-8876-030613	Date Analyzed:	03/08/13 19:43
Lab Samp ID:	C031-02	Dilution Factor:	1
Lab File ID:	RCC125	Matrix :	WATER
Ext Btch ID:	VO67C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	2.4	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	1.6	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.28	10.00	82.8	70-120
4-BROMOFLUOROBENZENE	8.66	10.00	86.6	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	9.68	10.00	96.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 16:07
Sample ID:	24-BB78-030613	Date Analyzed:	03/08/13 16:07
Lab Samp ID:	C031-03	Dilution Factor:	1
Lab File ID:	RCC118	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.5	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.52	10.00	95.2	70-120
4-BROMOFLUOROBENZENE	8.50	10.00	85.0	75-120
TOLUENE-D8	9.36	10.00	93.6	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 20:14
Sample ID:	24-TW-14-030613	Date Analyzed:	03/08/13 20:14
Lab Samp ID:	C031-D4	Dilution Factor:	1
Lab File ID:	RCC126	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	63	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.41J	0.50	0.20
TRICHLOROETHENE	0.29J	0.50	0.20
VINYL CHLORIDE	15	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.49	10.00	84.9	70-120
4-BROMOFLUOROBENZENE	8.53	10.00	85.3	75-120
TOLUENE-D8	9.59	10.00	95.9	85-120
DIBROMOFLUOROMETHANE	9.74	10.00	97.4	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 20:44
Sample ID:	24-TW-16-030613	Date Analyzed:	03/08/13 20:44
Lab Samp ID:	C031-05	Dilution Factor:	1
Lab File ID:	RCC127	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	74	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	8.8	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.53	10.00	85.3	70-120
4-BROMOFLUOROBENZENE	8.61	10.00	86.1	75-120
TOLUENE-D8	9.66	10.00	96.6	85-120
DIBROMOFLUOROMETHANE	9.83	10.00	98.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/11/13 20:44
Sample ID:	24-MW07C-D30613	Date Analyzed:	03/11/13 20:44
Lab Samp ID:	C031-06R	Dilution Factor:	1
Lab File ID:	RCC144	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.21J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.57	10.00	85.7	70-120
4-BROMOFLUOROBENZENE	8.47	10.00	84.7	75-120
TOLUENE-D8	9.58	10.00	95.8	85-120
DIBROMOFLUOROMETHANE	9.90	10.00	99.0	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 21:45
Sample ID:	24-MW07B-030613	Date Analyzed:	03/08/13 21:45
Lab Samp ID:	C031-07	Dilution Factor:	1
Lab File ID:	RCC129	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.42J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.48J	0.50	0.20
VINYL CHLORIDE	0.25J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.34	10.00	83.4	70-120
4-BROMOFLUOROBENZENE	8.63	10.00	86.3	75-120
TOLUENE-D8	9.58	10.00	95.8	85-120
DIBROMOFLUOROMETHANE	9.71	10.00	97.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 16:37
Sample ID:	24-TW-23-03D713	Date Analyzed:	03/08/13 16:37
Lab Samp ID:	C031-08	Dilution Factor:	1
Lab File ID:	RCC119	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.49J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.30	10.00	83.0	70-120
4-BROMOFLUOROBENZENE	8.87	10.00	88.7	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	9.75	10.00	97.5	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C031	Date Extracted: 03/08/13 22:16
Sample ID: 24-JW11-030713	Date Analyzed: 03/08/13 22:16
Lab Samp ID: C031-09	Dilution Factor: 1
Lab File ID: RCC130	Matrix : WATER
Ext Btch ID: V067C06	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.27	10.00	82.7	70-120
4-BROMOFLUOROBENZENE	8.62	10.00	86.2	75-120
TOLUENE-D8	9.78	10.00	97.8	85-120
DIBROMOFLUOROMETHANE	9.75	10.00	97.5	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 22:47
Sample ID:	24-MW07A-030713	Date Analyzed:	03/08/13 22:47
Lab Samp ID:	C031-10	Dilution Factor:	1
Lab File ID:	RCC131	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.67	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.36J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.53	10.00	85.3	70-120
4-BROMOFLUOROBENZENE	8.53	10.00	85.3	75-120
TOLUENE-D8	9.52	10.00	95.2	85-120
DIBROMOFLUOROMETHANE	9.89	10.00	98.9	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C031	Date Extracted: 03/08/13 23:18
Sample ID: 24-IW6-030713	Date Analyzed: 03/08/13 23:18
Lab Samp ID: C031-11	Dilution Factor: 1
Lab File ID: RCC132	Matrix : WATER
Ext Btch ID: V067C06	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.35J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.52	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.45	10.00	84.5	70-120
4-BROMOFLUOROBENZENE	8.55	10.00	85.5	75-120
TOLUENE-D8	9.63	10.00	96.3	85-120
DIBROMOFLUOROMETHANE	9.74	10.00	97.4	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 15:36
Sample ID:	030713-ER-04	Date Analyzed:	03/08/13 15:36
Lab Samp ID:	C031-12	Dilution Factor:	1
Lab File ID:	RCC117	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.53	10.00	85.3	70-120
4-BROMOFLUOROBENZENE	8.77	10.00	87.7	75-120
TOLUENE-D8	9.53	10.00	95.3	85-120
DIBROMOFLUOROMETHANE	9.83	10.00	98.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/08/13 23:48
Sample ID:	24-MW04-030713	Date Analyzed:	03/08/13 23:48
Lab Samp ID:	C031-13	Dilution Factor:	1
Lab File ID:	RCC133	Matrix :	WATER
Ext Btch ID:	V067C06	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	2.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.67	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.48	10.00	84.8	70-120
4-BROMOFLUOROBENZENE	8.60	10.00	86.0	75-120
TOLUENE-D8	9.77	10.00	97.7	85-120
DIBROMOFLUOROMETHANE	9.83	10.00	98.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C031	Date Extracted:	03/11/13 23:16
Sample ID:	24-IW14-030713	Date Analyzed:	03/11/13 23:16
Lab Samp ID:	C031-14	Dilution Factor:	1
Lab File ID:	RCC149	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.34	10.00	83.4	70-120
4-BROMOFLUOROBENZENE	8.78	10.00	87.8	75-120
TOLUENE-D8	9.64	10.00	96.4	85-120
DIBROMOFLUOROMETHANE	9.95	10.00	99.5	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C031	Date Extracted: 03/08/13 14:35
Sample ID: MBLK1W	Date Analyzed: 03/08/13 14:35
Lab Samp ID: V067C06B	Dilution Factor: 1
Lab File ID: RCC115	Matrix : WATER
Ext Btch ID: V067C06	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.24	10.00	82.4	70-120
4-BROMOFLUOROBENZENE	8.71	10.00	87.1	75-120
TOLUENE-D8	9.76	10.00	97.6	85-120
DIBROMOFLUOROMETHANE	9.65	10.00	96.5	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C031
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V067C06B	V067C06L	V067C06C		
LAB FILE ID:	RCC115	RCC112	RCC113		
DATE EXTRACTED:	03/08/1314:35	03/08/1313:02	03/08/1313:33	DATE COLLECTED:	NA
DATE ANALYZED:	03/08/1314:35	03/08/1313:02	03/08/1313:33	DATE RECEIVED:	03/08/13
PREP. BATCH:	V067C06	V067C06	V067C06		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.72	97	10.0	9.27	93	5	70-125	30
Tetrachloroethene	ND	10.0	10.3	103	10.0	9.63	96	7	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.39	94	10.0	8.85	89	6	60-140	30
Trichloroethene	ND	10.0	10.8	108	10.0	10.2	102	5	70-125	30
Vinyl Chloride	ND	10.0	8.83	88	10.0	9.90	99	11	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.37	84	10.0	8.38	84	70-120
4-Bromofluorobenzene	10.0	9.06	91	10.0	9.05	91	75-120
Toluene-d8	10.0	9.78	98	10.0	9.56	96	85-120
Dibromofluoromethane	10.0	9.61	96	10.0	9.70	97	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/11/13
Batch No.	: 13C031	Date Extracted:	03/11/13 19:12
Sample ID:	MBLK2W	Date Analyzed:	03/11/13 19:12
Lab Samp ID:	V067C07B	Dilution Factor:	1
Lab File ID:	RCC141	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	7.93	10.00	79.3	70-120
4-BROMOFLUOROBENZENE	8.95	10.00	89.5	75-120
TOLUENE-D8	9.88	10.00	98.8	85-120
DIBROMOFLUOROMETHANE	9.52	10.00	95.2	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C031
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V067C07B	V067C07L	V067C07C		
LAB FILE ID:	RCC141	RCC138	RCC139		
DATE EXTRACTED:	03/11/1319:12	03/11/1317:40	03/11/1318:10	DATE COLLECTED:	NA
DATE ANALYZED:	03/11/1319:12	03/11/1317:40	03/11/1318:10	DATE RECEIVED:	03/11/13
PREP. BATCH:	V067C07	V067C07	V067C07		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.42	94	10.0	8.88	89	6	70-125	30
Tetrachloroethene	ND	10.0	9.75	98	10.0	9.17	92	6	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.15	92	10.0	8.66	87	6	60-140	30
Trichloroethene	ND	10.0	10.3	103	10.0	9.83	98	5	70-125	30
Vinyl Chloride	ND	10.0	10.7	107	10.0	9.39	94	13	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	7.78	78	10.0	8.19	82	70-120
4-Bromofluorobenzene	10.0	9.26	93	10.0	9.17	92	75-120
Toluene-d8	10.0	9.76	98	10.0	9.64	96	85-120
Dibromofluoromethane	10.0	9.72	97	10.0	9.55	95	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C031
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-BB78-030613				
LAB SAMP ID:	C031-03	C031-03M	C031-03S		
LAB FILE ID:	RCC118	RCC122	RCC123		
DATE EXTRACTED:	03/08/1316:07	03/08/1318:10	03/08/1318:41	DATE COLLECTED:	03/06/13
DATE ANALYZED:	03/08/1316:07	03/08/1318:10	03/08/1318:41	DATE RECEIVED:	03/08/13
PREP. BATCH:	V067C06	V067C06	V067C06		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	1.47	10.0	10.9	94	10.0	9.47	80	14	70-125	30
Tetrachloroethene	ND	10.0	9.03	90	10.0	9.48	95	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.78	88	10.0	8.05	81	9	60-140	30
Trichloroethene	ND	10.0	9.72	97	10.0	9.96	100	2	70-125	30
Vinyl Chloride	ND	10.0	9.93	99	10.0	10.6	106	7	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.61	96	10.0	7.49	75	70-120
4-Bromofluorobenzene	10.0	8.62	86	10.0	8.20	82	75-120
Toluene-d8	10.0	9.65	97	10.0	9.55	95	85-120
Dibromofluoromethane	10.0	10.3	103	10.0	9.26	93	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C031
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-TW-23-030713				
LAB SAMP ID:	C031-08	C031-08M	C031-08S		
LAB FILE ID:	RCC119	RCC120	RCC121		
DATE EXTRACTED:	03/08/1316:37	03/08/1317:08	03/08/1317:39	DATE COLLECTED:	03/07/13
DATE ANALYZED:	03/08/1316:37	03/08/1317:08	03/08/1317:39	DATE RECEIVED:	03/08/13
PREP. BATCH:	V067C06	V067C06	V067C06		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	0.491J	10.0	9.48	90	10.0	9.64	92	2	70-125	30
Tetrachloroethene	ND	10.0	9.15	91	10.0	9.49	95	4	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.57	86	10.0	8.80	88	3	60-140	30
Trichloroethene	ND	10.0	9.88	99	10.0	10.1	101	2	70-125	30
Vinyl Chloride	ND	10.0	8.70	87	10.0	9.38	94	8	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.47	85	10.0	8.45	85	70-120
4-Bromofluorobenzene	10.0	8.85	88	10.0	9.00	90	75-120
Toluene-d8	10.0	9.70	97	10.0	9.71	97	85-120
Dibromofluoromethane	10.0	9.81	98	10.0	9.83	98	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C032**

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WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-28-2013
EMAX Batch No.: 13C032

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/08/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
030613-TB-03	C032-01	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW07B-030613	C032-02	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW10B-030613	C032-03	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-MW10A-030613	C032-04	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP20-030613	C032-05	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP30-030613	C032-06	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP30-030613-D	C032-07	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
21-IP37-030613	C032-08	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
030613-ER-03	C032-09	03/06/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-03-030713	C032-10	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW8-030713	C032-11	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW8-030713	C032-12	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW5-030713	C032-13	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW2A-1-030713	C032-14	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-MW2B-1-030713	C032-15	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW6-030713	C032-16	03/07/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER NN-030613

PROJECT NAME	PURCHASE ORDER NO.	LABORATORY NAME
Treasure Island Sites 21 and 24	Send Invoice to Trevet	EMAX (310) 618-8889
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083	
SAMPLER NAME: NN	AIRBILL NUMBER	LABORATORY ID (FOR LABORATORY): 13C032
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826	

ANALYSES REQUIRED: VOCs - project list (8260B)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1.	030613-TB-03	3/6/13	0730	3	X		W	10 DAY	X	Trip Blank
2.	21-MW07B-030613	3/6/13	1005	3		X	W	10 DAY	X	
3	21-MW10B-030613	3/6/13	1115	3	X		W	10 DAY	X	
4.	21-MW10A-030613	3/6/13	1225	3	X		W	10 DAY	X	
5.	21-IP20-030613	3/6/13	1420	3	X		W	10 DAY	X	
6.	21-IP30-030613	3/6/13	1520	3	X		W	10 DAY	X	
7	21-IP30-030613-D	3/6/13	1525	3	X		W	10 DAY	X	
8.	21-IP37-030613	3/6/13	1635	3	X		W	10 DAY	X	
9.	030613-ER-03	3/6/13	~~1740~~ 1715 NN	3	X		W	10 DAY	X	Equip Rinse
10	24-TW-03-030713	3/7/13	0915	3	X		W	10 DAY	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
P. Nilsson	3/7/13	
COMPANY: Trevet	TIME: 1800	COMPANY
RELINQUISHED BY (Signature)	DATE: 3/8/13	RECEIVED BY (Signature)
COMPANY	TIME: 09-15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.5°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling
Cooler 2

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER NN-030713

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: NN	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C032

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
11	24-EW8-030713	3/7/13	1015	3	X		W	10 DAY	X	
12	24-EW8-030713	3/7/13	1120	3		X	W	10 DAY	X	
13	24-EW5-030713	3/7/13	1300	3	X		W	10 DAY	X	
14	24-MW2A-1-030713	3/7/13	1430	3	X		W	10 DAY	X	
15	24-MW2B-1-030713	3/7/13	1525	3	X		W	10 DAY	X	
16	24-EW6-030713	3/7/13	1640	3	X		W	10 DAY	X	
										NN

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
P. Nihan	3/7/13	
COMPANY: Trevet	TIME: 1800	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/8/13	RECEIVED BY (Signature): Christin Cg
COMPANY	TIME: 09:15	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.5 C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling
Cooler 2

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 13 C032
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7955 5251 9035	Recipient I. Baez
☐ EMAX Courier ☐ Client Delivery		Date 3/8/13 Time 0915

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sample Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☐ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☑ Plastic Bag
Temperatures (Cool, =6 °C but not frozen)	D ☑ Cooler 1 3.5 °C Cooler #2	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C

Thermometer: *A - S/N 101541371* *B - S/N 101541382* *C - S/N 122091701* *D - S/N 122091758*

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code
05	013	B3	ID: 21-1P30-030613	R2
			3/6/13 Time 1420	
7	20	B3	Label - 21-1P30-030613	R2

☐ **Continue to next page.**

REVIEWS

Sample Labeling _____ Date 3/8/13 3/8/13

SRF _____ Date 3/8/13

PM _____ Date 3/8/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:17 AM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Results SDGs: 13C032, 13C036 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C032 and 13C036, thanks.
Hanh

-----Original Message-----
From: Hanh Bui
Sent: Monday, March 11, 2013 2:03 PM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Samples Login SDGS: 13C032, 13C036 (TI 21 &24)

Hi Jordy,

Please review the login samples received on 3/8 and 3/9, thanks.
Hanh

ORIGIN ID:JEMA (858) 578-8859
TREVET

9888 CARROLL CENTRE RD

SAN DIEGO, CA 921264579
UNITED STATES US

SHIP DATE: 08MAR13
ACTWGT: 36.9 LB
CAD: /OFFC1400
DIMS: 24x10x13 IN

BILL SENDER

Part # 156297-435 RIT 12/12

10 **SAMPLE RECEIVING**
EMAX
1835 W 205TH ST

13 C032

TORRANCE CA 90501
(310) 618-8889 REF:
INV: DEPT:
PO:

FedEx
Express

J13101212160126

3 of 3
MPS# 0681 7955 5251 9035
Mstr# 8022 3754 0987 0200

MON - 11 MAR 10:30A
PRIORITY OVERNIGHT

WZ HHRA

90501
CA-US **LAX**

Order 2
35

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C032

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C032

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of sixteen (16) water samples were received on 03/08/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO06C03L/C were all within QC limits.
Percent recoveries for VO06C04L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C032
Instrument ID : T-006

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V006C03B	1	NA	03/08/1317:24	03/08/1317:24	RCW037	RBW214	V006C03	Method Blank
LCS1W	V006C03L	1	NA	03/08/1315:54	03/08/1315:54	RCW034	RBW214	V006C03	Lab Control Sample (LCS)
LCD1W	V006C03C	1	NA	03/08/1316:25	03/08/1316:25	RCW035	RBW214	V006C03	LCS Duplicate
030613-TB-03	C032-01	1	NA	03/08/1317:53	03/08/1317:53	RCW038	RBW214	V006C03	Field Sample
030613-ER-03	C032-09	1	NA	03/08/1318:23	03/08/1318:23	RCW039	RBW214	V006C03	Field Sample
21-MW10B-030613	C032-03	1	NA	03/08/1319:23	03/08/1319:23	RCW041	RBW214	V006C03	Field Sample
21-MW10A-030613	C032-04	1	NA	03/08/1319:53	03/08/1319:53	RCW042	RBW214	V006C03	Field Sample
21-IP20-030613	C032-05	1	NA	03/08/1320:22	03/08/1320:22	RCW043	RBW214	V006C03	Field Sample
21-IP30-030613	C032-06	1	NA	03/08/1320:52	03/08/1320:52	RCW044	RBW214	V006C03	Field Sample
21-IP30-030613-D	C032-07	1	NA	03/08/1321:22	03/08/1321:22	RCW045	RBW214	V006C03	Field Sample
21-IP37-030613	C032-08	1	NA	03/08/1321:52	03/08/1321:52	RCW046	RBW214	V006C03	Field Sample
24-TW-03-030713	C032-10	1	NA	03/08/1322:22	03/08/1322:22	RCW047	RBW214	V006C03	Field Sample
24-IWB-030713	C032-11	1	NA	03/08/1322:52	03/08/1322:52	RCW048	RBW214	V006C03	Field Sample
24-EW8-030713	C032-12	1	NA	03/08/1323:22	03/08/1323:22	RCW049	RBW214	V006C03	Field Sample
24-EW5-030713	C032-13	1	NA	03/08/1323:52	03/08/1323:52	RCW050	RBW214	V006C03	Field Sample
24-MW2A-1-030713	C032-14	1	NA	03/09/1300:22	03/09/1300:22	RCW051	RBW214	V006C03	Field Sample
24-MW2B-1-030713	C032-15	1	NA	03/09/1300:52	03/09/1300:52	RCW052	RBW214	V006C03	Field Sample
24-EW6-030713	C032-16	1	NA	03/09/1301:22	03/09/1301:22	RCW053	RBW214	V006C03	Field Sample
MBLK2W	V006C04B	1	NA	03/12/1316:09	03/12/1316:09	RCW064	RBW214	V006C04	Method Blank
LCS2W	V006C04L	1	NA	03/12/1314:39	03/12/1314:39	RCW061	RBW214	V006C04	Lab Control Sample (LCS)
LCD2W	V006C04C	1	NA	03/12/1315:09	03/12/1315:09	RCW062	RBW214	V006C04	LCS Duplicate
21-MW07B-030613	C032-02R	1	NA	03/12/1316:39	03/12/1316:39	RCW065	RBW214	V006C04	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 17:53
Sample ID: 030613-TB-03	Date Analyzed: 03/08/13 17:53
Lab Samp ID: C032-01	Dilution Factor: 1
Lab File ID: RCW038	Matrix : WATER
Ext Btch ID: V006C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.5	10.00	105	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/12/13 16:39
Sample ID:	21-MW07B-030613	Date Analyzed:	03/12/13 16:39
Lab Samp ID:	C032-02R	Dilution Factor:	1
Lab File ID:	RCW065	Matrix :	WATER
Ext Btch ID:	VO06C04	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.94	10.00	99.4	70-120
4-BROMOFLUOROBENZENE	9.84	10.00	98.4	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 19:23
Sample ID:	21-MW10B-030613	Date Analyzed:	03/08/13 19:23
Lab Samp ID:	C032-03	Dilution Factor:	1
Lab File ID:	RCW041	Matrix :	WATER
Ext Btch ID:	VO06C03	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	9.80	10.00	98.0	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 19:53
Sample ID:	21-MW10A-030613	Date Analyzed:	03/08/13 19:53
Lab Samp ID:	C032-04	Dilution Factor:	1
Lab File ID:	RCW042	Matrix :	WATER
Ext Btch ID:	V006C03	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.4	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.50J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	1.0	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	9.86	10.00	98.6	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 20:22
Sample ID: 21-IP20-030613	Date Analyzed: 03/08/13 20:22
Lab Samp ID: C032-05	Dilution Factor: 1
Lab File ID: RCW043	Matrix : WATER
Ext Btch ID: VO06C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.47J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.85	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.68	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 20:52
Sample ID:	21-IP30-030613	Date Analyzed:	03/08/13 20:52
Lab Samp ID:	C032-06	Dilution Factor:	1
Lab File ID:	RCW044	Matrix :	WATER
Ext Btch ID:	VO06C03	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.62	0.50	0.20
TRICHLDROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.97	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 21:22
Sample ID: 21-IP30-030613-D	Date Analyzed: 03/08/13 21:22
Lab Samp ID: C032-07	Dilution Factor: 1
Lab File ID: RCW045	Matrix : WATER
Ext Btch ID: V006C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.63	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.98	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	11.0	10.00	110	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/06/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 21:52
Sample ID:	21-IP37-030613	Date Analyzed:	03/08/13 21:52
Lab Samp ID:	C032-08	Dilution Factor:	1
Lab File ID:	RCW046	Matrix :	WATER
Ext Btch ID:	V006C03	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.67	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.37J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.39J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	11.0	10.00	110	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/06/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 18:23
Sample ID: 030613-ER-03	Date Analyzed: 03/08/13 18:23
Lab Samp ID: C032-09	Dilution Factor: 1
Lab File ID: RCW039	Matrix : WATER
Ext Btch ID: V006C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 22:22
Sample ID: 24-TW-03-030713	Date Analyzed: 03/08/13 22:22
Lab Samp ID: C032-10	Dilution Factor: 1
Lab File ID: RCW047	Matrix : WATER
Ext Btch ID: V006C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/07/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 22:52
Sample ID:	24-IW8-030713	Date Analyzed:	03/08/13 22:52
Lab Samp ID:	C032-11	Dilution Factor:	1
Lab File ID:	RCW048	Matrix	: WATER
Ext Btch ID:	VO06C03	% Moisture	: NA
Calib. Ref.:	RBW214	Instrument ID	: 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.1	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.39J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 23:22
Sample ID: 24-EW8-030713	Date Analyzed: 03/08/13 23:22
Lab Samp ID: C032-12	Dilution Factor: 1
Lab File ID: RCW049	Matrix : WATER
Ext Btch ID: VO06C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.25J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	1.1	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/08/13 23:52
Sample ID: 24-EW5-030713	Date Analyzed: 03/08/13 23:52
Lab Samp ID: C032-13	Dilution Factor: 1
Lab File ID: RCW050	Matrix : WATER
Ext Btch ID: V006C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.40J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/09/13 00:22
Sample ID: 24-MW2A-1-030713	Date Analyzed: 03/09/13 00:22
Lab Samp ID: C032-14	Dilution Factor: 1
Lab File ID: RCW051	Matrix : WATER
Ext Btch ID: VO06C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.26J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.37J	0.50	0.20

SURRDGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBRDMDFLUOROMETHANE	11.1	10.00	111	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/09/13 00:52
Sample ID: 24-MW2B-1-030713	Date Analyzed: 03/09/13 00:52
Lab Samp ID: C032-15	Dilution Factor: 1
Lab File ID: RCW052	Matrix : WATER
Ext Btch ID: VO06C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.40J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.28J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.45J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUORDMETHANE	10.9	10.00	109	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/07/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/08/13
Batch No. : 13C032	Date Extracted: 03/09/13 01:22
Sample ID: 24-EW6-030713	Date Analyzed: 03/09/13 01:22
Lab Samp ID: C032-16	Dilution Factor: 1
Lab File ID: RCW053	Matrix : WATER
Ext Btch ID: VO06C03	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.89	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
4-BROMOFLUOROBENZENE	9.86	10.00	98.6	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/08/13
Batch No.	: 13C032	Date Extracted:	03/08/13 17:24
Sample ID:	MBLK1W	Date Analyzed:	03/08/13 17:24
Lab Samp ID:	V006C03B	Dilution Factor:	1
Lab File ID:	RCW037	Matrix :	WATER
Ext Btch ID:	V006C03	% Moisture :	NA
Calib. Ref.:	RBW214	Instrument ID :	D6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.6	10.00	106	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C032
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V006C03B	VD06C03L	V006C03C		
LAB FILE ID:	RCW037	RCW034	RCW035		
DATE EXTRACTED:	03/08/1317:24	03/08/1315:54	03/08/1316:25	DATE COLLECTED:	NA
DATE ANALYZED:	03/08/1317:24	03/08/1315:54	03/08/1316:25	DATE RECEIVED:	03/08/13
PREP. BATCH:	V006C03	V006C03	V006C03		
CALIB. REF:	RBW214	RBW214	RBW214		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.57	86	10.0	8.04	80	6	70-125	30
Tetrachloroethene	ND	10.0	9.58	96	10.0	8.97	90	7	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.77	88	10.0	8.36	84	5	60-140	30
Trichloroethene	ND	10.0	9.68	97	10.0	9.22	92	5	70-125	30
Vinyl Chloride	ND	10.0	8.46	85	10.0	8.17	82	3	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.7	107	10.0	10.3	103	70-120
4-Bromofluorobenzene	10.0	10.5	105	10.0	10.5	105	75-120
Toluene-d8	10.0	10.2	102	10.0	10.3	103	85-120
Dibromofluoromethane	10.0	10.4	104	10.0	10.3	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND 21 & 24	Date Received: 03/12/13
Batch No. : 13C032	Date Extracted: 03/12/13 16:09
Sample ID: MBLK2W	Date Analyzed: 03/12/13 16:09
Lab Samp ID: V006C04B	Dilution Factor: 1
Lab File ID: RCW064	Matrix : WATER
Ext Btch ID: V006C04	% Moisture : NA
Calib. Ref.: RBW214	Instrument ID : 06

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLORDETHANE-D4	9.03	10.00	90.3	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	9.97	10.00	99.7	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C032
METHOD: METHDD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V006C04B	V006C04L	V006C04C		
LAB FILE ID:	RCW064	RCW061	RCW062		
DATE EXTRACTED:	03/12/1316:09	03/12/1314:39	03/12/1315:09	DATE COLLECTED:	NA
DATE ANALYZED:	03/12/1316:09	03/12/1314:39	03/12/1315:09	DATE RECEIVED:	03/12/13
PREP. BATCH:	V006C04	V006C04	V006C04		
CALIB. REF:	RBW214	RBW214	RBW214		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.50	95	10.0	9.23	92	3	70-125	30
Tetrachloroethene	ND	10.0	10.1	101	10.0	9.52	95	6	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.19	92	10.0	9.01	90	2	60-140	30
Trichloroethene	ND	10.0	9.72	97	10.0	9.38	94	4	70-125	30
Vinyl Chloride	ND	10.0	8.89	89	10.0	8.35	84	6	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.13	91	10.0	9.40	94	70-120
4-Bromofluorobenzene	10.0	10.2	102	10.0	10.1	101	75-120
Toluene-d8	10.0	10.2	102	10.0	10.1	101	85-120
Dibromofluoromethane	10.0	9.93	99	10.0	10.0	100	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C036**

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OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-28-2013
EMAX Batch No.: 13C036

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/09/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
030813-TB-03	C036-01	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-47-030813	C036-02	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW21-030813	C036-03	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-IW21-030813-D	C036-04	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-50-030813	C036-05	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-51-030813	C036-06	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-37-030813	C036-07	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-34-030813	C036-08	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS
030813-ER-02	C036-09	03/08/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER NN-030813

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Sites 21 and 24	Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: NN/GT/JS	AIRBILL NUMBER
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13C036

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	030813-TB-03	3/8/13	0800	3	X		W	10 DAY	X	Trip Blank
2	24-TW-47-030813	3/8/13	0940	3		X	W	10 DAY	X	
3	24-IW21-030813	3/8/13	1025	3	X		W	10 DAY	X	
4	24-IW21-030813-D	3/8/13	1030	3	X		W	10 DAY	X	
5	24-TW50-030813	3/8/13	0915	3	X		W	10 DAY	X	
6	24-TW51-030813	3/8/13	1035	3	X		W	10 DAY	X	
7	24-TW-37-030813	3/8/13	0915	3	X		W	10 DAY	X	
8	24-TW-34-030813	3/8/13	1005	3	X		W	10 DAY	X	
9	030813-ER-02	3/8/13	1100	3	X		W	10 DAY	X	Equip Rinse
										NN

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
P. Nilmon	3/8/13	[illegible]
COMPANY: Trevet	TIME: 1200	COMPANY
RELINQUISHED BY (Signature): [illegible]	DATE: 3/9/13	RECEIVED BY (Signature): [illegible]
COMPANY	TIME: 10:00	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.1°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill/Tracking Number	ECN 130036
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8022 2091 7658	Recipient Patel
☐ EMAX Courier ☐ Client Delivery		Date 3/9/13 Time 10:00

COC Inspection

☑ Client Name ☑ Client PM/FC ☑ Sampler Name ☑ Sampling Date/Time/Location ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel #/ Fax # ☐ Courier Signature ☑ Analysis Required ☐ Preservative (if any) ☑ PAI
Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, ≈6 °C but not frozen)	☑ Cooler 1 3.1 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 3/11/13

SRF [signature] Date 3/11/13

PM [signature] Date 3/11/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG ____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Friday, March 15, 2013 9:17 AM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Results SDGs: 13C032, 13C036 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C032 and 13C036, thanks.
Hanh

-----Original Message-----
From: Hanh Bui
Sent: Monday, March 11, 2013 2:03 PM
To: 'Jordana Scanlan'; 'Gerald Tamashiro'
Cc: Ye Myint
Subject: Samples Login SDGS: 13C032, 13C036 (TI 21 &24)

Hi Jordy,

Please review the login samples received on 3/8 and 3/9, thanks.
Hanh

Hanh Bui

From: Jordana Scanlan [jscanlan@trevetinc.com]
Sent: Monday, March 11, 2013 6:50 PM
To: Hanh Bui
Cc: Gerald Tamashiro; Ye Myint
Subject: Re: Samples Login SDGS: 13C032, 13C036 (TI 6&12)

Hi hanh,

Please revise two sample Ids on 13c036:

24-TW50-030813 should read 24-TW-50-030813 → C036 - 05

24-TW51-030813 should read 24-TW-51-030813 → C036 - 06

Thanks!
Sent from my iPhone

On Mar 11, 2013, at 2:03 PM, "Hanh Bui" <HDBui@emaxlabs.com> wrote:

> Hi Jordy,
>
> Please review the login samples received on 3/8 and 3/9, thanks.
> Hanh
>
> <13C032.pdf>
>
> <13C036.pdf>

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8022 7091 7658

Form ID No. 0200 Recipient Copy

1 From

Date 3/8/13 [redacted]

Sender's Name G. TAMASHIRO Phone 8585788859

Company TRUEVET

Address 9888 CARROLL CANYON RD #228 Dept./Floor/Suite/Room

City SAN DIEGO State CA ZIP 92126

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Receiving Phone 310 6188887

Company EMAX LAB

Address 1835 W. 205th ST. Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City TORRANCE State CA ZIP 90501

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8022 7091 7658

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options

- [x] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

- [ ] Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip. Acct. No. [ ]

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

[redacted]

Total Packages 1 Total Weight 6 lbs. Credit Card Auth.

644

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Align Open End of FedEx Pouch Here

1005

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C036

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C036

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of nine (9) water samples were received on 03/09/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Two (2) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for V067C07L/C were all within QC limits.
Percent recoveries for V067C08L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C036
Instrument ID : T-067

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V067C07B	1	NA	03/11/1319:12	03/11/1319:12	RCC141	RCC051	V067C07	Method Blank
LCS1W	V067C07L	1	NA	03/11/1317:40	03/11/1317:40	RCC138	RCC051	V067C07	Lab Control Sample (LCS)
LCD1W	V067C07C	1	NA	03/11/1318:10	03/11/1318:10	RCC139	RCC051	V067C07	LCS Duplicate
030813-TB-03	C036-01	1	NA	03/11/1319:43	03/11/1319:43	RCC142	RCC051	V067C07	Field Sample
030813-ER-02	C036-09	1	NA	03/11/1320:13	03/11/1320:13	RCC143	RCC051	V067C07	Field Sample
24-TW-47-030813	C036-02	1	NA	03/11/1323:47	03/11/1323:47	RCC150	RCC051	V067C07	Field Sample
24-TW-50-030813	C036-05	1	NA	03/12/1301:18	03/12/1301:18	RCC153	RCC051	V067C07	Field Sample
24-TW-51-030813	C036-06	1	NA	03/12/1301:50	03/12/1301:50	RCC154	RCC051	V067C07	Field Sample
24-TW-37-030813	C036-07	1	NA	03/12/1302:21	03/12/1302:21	RCC155	RCC051	V067C07	Field Sample
24-TW-34-030813	C036-08	1	NA	03/12/1302:53	03/12/1302:53	RCC156	RCC051	V067C07	Field Sample
MBLK2W	V067C08B	1	NA	03/12/1312:39	03/12/1312:39	RCC164	RCC051	V067C08	Method Blank
LCS2W	V067C08L	1	NA	03/12/1311:06	03/12/1311:06	RCC161	RCC051	V067C08	Lab Control Sample (LCS)
LCD2W	V067C08C	1	NA	03/12/1311:36	03/12/1311:36	RCC162	RCC051	V067C08	LCS Duplicate
24-TW-47-030813DL	C036-02T	25	NA	03/12/1313:08	03/12/1313:08	RCC165	RCC051	V067C08	Diluted Sample
24-IW21-030813-D	C036-04R	1	NA	03/12/1313:41	03/12/1313:41	RCC166	RCC051	V067C08	Field Sample
24-IW21-030813	C036-03R	1	NA	03/12/1314:10	03/12/1314:10	RCC167	RCC051	V067C08	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/11/13 19:43
Sample ID:	030813-TB-03	Date Analyzed:	03/11/13 19:43
Lab Samp ID:	C036-01	Dilution Factor:	1
Lab File ID:	RCC142	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	7.97	10.00	79.7	70-120
4-BROMOFLUOROBENZENE	8.88	10.00	88.8	75-120
TOLUENE-D8	9.67	10.00	96.7	85-120
DIBROMOFLUOROMETHANE	9.65	10.00	96.5	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/11/13 23:47 # 03/12/13 13:08
Sample ID:	24-TW-47-030813	Date Analyzed:	03/11/13 23:47 # 03/12/13 13:08
Lab Samp ID:	C036-02 #C036-02T	Dilution Factor:	1 # 25
Lab File ID:	RCC150 #RCC165	Matrix :	WATER
Ext Btch ID:	V067C07 #V067C08	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHENE	560	12	5.0
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.0	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
# VINYL CHLORIDE	460	12	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.41	10.00	84.1	70-120
4-BROMOFLUOROBENZENE	8.91	10.00	89.1	75-120
TOLUENE-D8	9.60	10.00	96.0	85-120
DIBROMOFLUOROMETHANE	9.97	10.00	99.7	85-115
# 1,2-DICHLOROETHANE-D4	191	250.0	76.5	70-120
# 4-BROMOFLUOROBENZENE	223	250.0	89.3	75-120
# TOLUENE-D8	243	250.0	97.4	85-120
# DIBROMOFLUOROMETHANE	235	250.0	94.0	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/11/13 23:47
Sample ID:	24-TW-47-030813	Date Analyzed:	03/11/13 23:47
Lab Samp ID:	C036-02	Dilution Factor:	1
Lab File ID:	RCC150	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	440E	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.0	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	390E	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.41	10.00	84.1	70-120
4-BROMOFLUOROBENZENE	8.91	10.00	89.1	75-120
TOLUENE-D8	9.60	10.00	96.0	85-120
DIBROMOFLUOROMETHANE	9.97	10.00	99.7	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/12/13 13:08
Sample ID:	24-TW-47-030813DL	Date Analyzed:	03/12/13 13:08
Lab Samp ID:	C036-02T	Dilution Factor:	25
Lab File ID:	RCC165	Matrix :	WATER
Ext Btch ID:	V067C08	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	560	12	5.0
TETRACHLOROETHENE	ND	12	5.0
TRANS-1,2-DICHLOROETHENE	ND	12	5.0
TRICHLOROETHENE	ND	12	5.0
VINYL CHLORIDE	460	12	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	191	250.0	76.5	70-120
4-BROMOFLUOROBENZENE	223	250.0	89.3	75-120
TOLUENE-D8	243	250.0	97.4	85-120
DIBROMOFLUOROMETHANE	235	250.0	94.0	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/12/13 14:10
Sample ID:	24-IW21-030813	Date Analyzed:	03/12/13 14:10
Lab Samp ID:	C036-03R	Dilution Factor:	1
Lab File ID:	RCC167	Matrix :	WATER
Ext Btch ID:	V067C08	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.23J	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.09	10.00	80.9	70-120
4-BROMOFLUOROBENZENE	8.79	10.00	87.9	75-120
TOLUENE-D8	9.63	10.00	96.3	85-120
DIBROMOFLUOROMETHANE	9.63	10.00	96.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/08/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/09/13
Batch No. : 13C036	Date Extracted: 03/12/13 13:41
Sample ID: 24-IW21-030813-D	Date Analyzed: 03/12/13 13:41
Lab Samp ID: C036-04R	Dilution Factor: 1
Lab File ID: RCC166	Matrix : WATER
Ext Btch ID: V067C08	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.23J	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	7.82	10.00	78.2	70-120
4-BROMOFLUOROBENZENE	8.56	10.00	85.6	75-120
TOLUENE-D8	9.56	10.00	95.6	85-120
DIBROMOFLUOROMETHANE	9.50	10.00	95.0	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/12/13 01:18
Sample ID:	24-TW-50-030813	Date Analyzed:	03/12/13 01:18
Lab Samp ID:	C036-05	Dilution Factor:	1
Lab File ID:	RCC153	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.41J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.76	10.00	87.6	70-120
4-BROMOFLUOROBENZENE	8.38	10.00	83.8	75-120
TOLUENE-D8	9.65	10.00	96.5	85-120
DIBROMOFLUOROMETHANE	9.90	10.00	99.0	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/12/13 01:50
Sample ID:	24-TW-51-030813	Date Analyzed:	03/12/13 01:50
Lab Samp ID:	C036-06	Dilution Factor:	1
Lab File ID:	RCC154	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.73	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.77	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.49	10.00	84.9	70-120
4-BROMOFLUOROBENZENE	8.59	10.00	85.9	75-120
TOLUENE-D8	9.69	10.00	96.9	85-120
DIBROMOFLUOROMETHANE	9.79	10.00	97.9	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/12/13 02:21
Sample ID:	24-TW-37-030813	Date Analyzed:	03/12/13 02:21
Lab Samp ID:	C036-07	Dilution Factor:	1
Lab File ID:	RCC155	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	2.7	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	3.3	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.30	10.00	83.0	70-120
4-BROMOFLUOROBENZENE	8.50	10.00	85.0	75-120
TOLUENE-D8	9.75	10.00	97.5	85-120
DIBROMOFLUOROMETHANE	9.73	10.00	97.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 03/08/13
Project : TREASURE ISLAND 21 & 24	Date Received: 03/09/13
Batch No. : 13C036	Date Extracted: 03/12/13 02:53
Sample ID: 24-TW-34-030813	Date Analyzed: 03/12/13 02:53
Lab Samp ID: C036-08	Dilution Factor: 1
Lab File ID: RCC156	Matrix : WATER
Ext Btch ID: V067C07	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.30J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.49	10.00	84.9	70-120
4-BROMOFLUOROBENZENE	8.55	10.00	85.5	75-120
TOLUENE-D8	9.64	10.00	96.4	85-120
DIBROMOFLUOROMETHANE	9.70	10.00	97.0	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/08/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/09/13
Batch No.	: 13C036	Date Extracted:	03/11/13 20:13
Sample ID:	030813-ER-02	Date Analyzed:	03/11/13 20:13
Lab Samp ID:	C036-09	Dilution Factor:	1
Lab File ID:	RCC143	Matrix	: WATER
Ext Btch ID:	V067C07	% Moisture	: NA
Calib. Ref.:	RCC051	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURRDGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.11	10.00	81.1	70-120
4-BROMOFLUOROBENZENE	8.88	10.00	88.8	75-120
TOLUENE-D8	9.59	10.00	95.9	85-120
DIBROMOFLUOROMETHANE	9.52	10.00	95.2	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/11/13
Batch No.	: 13C036	Date Extracted:	03/11/13 19:12
Sample ID:	MBLK1W	Date Analyzed:	03/11/13 19:12
Lab Samp ID:	V067C07B	Dilution Factor:	1
Lab File ID:	RCC141	Matrix :	WATER
Ext Btch ID:	V067C07	% Moisture :	NA
Calib. Ref.:	RCC051	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	7.93	10.00	79.3	70-120
4-BROMOFLUOROBENZENE	8.95	10.00	89.5	75-120
TOLUENE-D8	9.88	10.00	98.8	85-120
DIBROMOFLUOROMETHANE	9.52	10.00	95.2	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C036
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V067C07B	V067C07L	V067C07C		
LAB FILE ID:	RCC141	RCC138	RCC139		
DATE EXTRACTED:	03/11/1319:12	03/11/1317:40	03/11/1318:10	DATE COLLECTED:	NA
DATE ANALYZED:	03/11/1319:12	03/11/1317:40	03/11/1318:10	DATE RECEIVED:	03/11/13
PREP. BATCH:	V067C07	V067C07	V067C07		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.42	94	10.0	8.88	89	6	70-125	30
Tetrachloroethene	ND	10.0	9.75	98	10.0	9.17	92	6	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.15	92	10.0	8.66	87	6	60-140	30
Trichloroethene	ND	10.0	10.3	103	10.0	9.83	98	5	70-125	30
Vinyl Chloride	ND	10.0	10.7	107	10.0	9.39	94	13	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	7.78	78	10.0	8.19	82	70-120
4-Bromofluorobenzene	10.0	9.26	93	10.0	9.17	92	75-120
Toluene-d8	10.0	9.76	98	10.0	9.64	96	85-120
Dibromofluoromethane	10.0	9.72	97	10.0	9.55	95	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND 21 & 24	Date Received: 03/12/13
Batch No. : 13C036	Date Extracted: 03/12/13 12:39
Sample ID: MBLK2W	Date Analyzed: 03/12/13 12:39
Lab Samp ID: V067C08B	Dilution Factor: 1
Lab File ID: RCC164	Matrix : WATER
Ext Btch ID: V067C08	% Moisture : NA
Calib. Ref.: RCC051	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	7.73	10.00	77.3	70-120
4-BROMOFLUOROBENZENE	8.72	10.00	87.2	75-120
TOLUENE-D8	9.58	10.00	95.8	85-120
DIBROMOFLUOROMETHANE	9.49	10.00	94.9	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C036
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V067C08B	V067C08L	V067C08C		
LAB FILE ID:	RCC164	RCC161	RCC162		
DATE EXTRACTED:	03/12/1312:39	03/12/1311:06	03/12/1311:36	DATE COLLECTED:	NA
DATE ANALYZED:	03/12/1312:39	03/12/1311:06	03/12/1311:36	DATE RECEIVED:	03/12/13
PREP. BATCH:	V067C08	V067C08	V067C08		
CALIB. REF:	RCC051	RCC051	RCC051		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.00	90	10.0	9.07	91	1	70-125	30
Tetrachloroethene	ND	10.0	9.17	92	10.0	9.27	93	1	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.76	88	10.0	8.53	85	3	60-140	30
Trichloroethene	ND	10.0	9.75	98	10.0	9.88	99	1	70-125	30
Vinyl Chloride	ND	10.0	9.75	98	10.0	9.84	98	1	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.01	80	10.0	7.99	80	70-120
4-Bromofluorobenzene	10.0	9.07	91	10.0	8.83	88	75-120
Toluene-d8	10.0	9.51	95	10.0	9.68	97	85-120
Dibromofluoromethane	10.0	9.59	96	10.0	9.55	96	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C051**

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GC/MS-SVOA	**	3000 –
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-29-2013
EMAX Batch No.: 13C051

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/13/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
031113-TB-02	C051-01	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-30-031113	C051-02	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW34-031113	C051-03	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW33-031113	C051-04	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-52-031113	C051-05	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-52-031113-D	C051-06	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW12-031213	C051-07	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB37-031213	C051-08	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB38-031213	C051-09	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-49-031213	C051-10	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-28-031213	C051-11	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-28-031213-D	C051-12	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-48-031213	C051-13	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-11-031213	C051-14	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
031213-ER-02	C051-15	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER 0312/3-1
13C051

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Sites 21 and 24	Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: Justin Mercer	AIRBILL NUMBER: 802270951929
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	031113-TB-02	3/11/13	1400	3	X		W	10 day	X	Trip blank
2	24-TW30-031113	3/11/13	1450	3		X	W	10 day	X	24-TW30
3	24-EW34-031113	3/11/13	1605	3	X		W	10 day	X	24-EW34
4	24-EW33-031113	3/11/13	1705	3	X		W	10 day	X	24-EW33
5	24-TW52-031113	3/11/13	1815	3	X		W	10 day	X	24-TW52
6	24-TW52-031113-D	3/11/13	1820	3	X		W	10 day	X	24-TW52 Duplicate
7	24-EW12-031213	3/12/13	0920	3	X		W	10 day	X	24-EW12
8	24-BB37-031213	3/12/13	1025	3	X		W	10 day	X	24-BB37
9	24-BB38-031213	3/12/13	1140	3	X		W	10 day	X	24-BB38
10	~~24-BB~~ 24-TW49-031213	3/12/13	1300	3	X		W	10 day	X	24-TW49

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	3/12/13	
COMPANY: Trevet	TIME: 1800	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/13/13	RECEIVED BY (Signature): [illegible]
COMPANY	TIME: 09:00	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.3 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

TOST

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER 031213-2

13C051

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Sites 21 and 24	Send Invoice to Trevet
PROJECT LOCATION	PROJECT NO.
NAVSTA Treasure Island	A083
SAMPLER NAME	AIRBILL NUMBER
Justin Mercer	802270951929
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
Gerald Tamashiro - TREVET	(714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
11	24-TW28-031213	3/12/13	1355	3	X		W	10 Day	X	24-TW28
12	24-TW28-031213-D	3/12/13	1400	3	X		W	10 Day	X	24-TW28 Duplicate
13	24-TW48-031213	3/12/13	1520	3	X		W	10 Day	X	24-TW48
14	24-TW11-031213	3/12/13	1645	3		X	W	10 Day	X	24-TW11
15	031213-FR-02	3/12/13	1655	3	X		W	10 Day	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	3/12/13	
COMPANY: Trevet	TIME: 1800	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/13/13	RECEIVED BY (Signature): [illegible]
COMPANY	TIME: 08:00	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.3 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012
Treasure Island Sites
21 and 24 GW Sampling

1052

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 130051
☐ Fedex ☐ UPS ☐ GSO ☐ Others	8022 7095 1929	Recipient I. PATEL
☐ EMAX Courier ☐ Client Delivery		Date 3/13/13 Time 0900

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, =6 °C but not frozen)	D ☑ Cooler 1 3.3 °C	☐ Cooler 2 ____ °C	☐ Cooler 3 ____ °C	☐ Cooler 4 ____ °C	☐ Cooler 5 ____ °C
	☐ Cooler 6 ____ °C	☐ Cooler 7 ____ °C	☐ Cooler 8 ____ °C	☐ Cooler 9 ____ °C	☐ Cooler 10 ____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling I. Patel Date 3/13/13

Clerk 3/13/13

SRF Clerk Date 3/13/13

PM HDB Date 3/14/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Tuesday, March 26, 2013 12:54 PM
To: 'Jordana Scanlan'; Gerald Tamashiro
Cc: Ye Myint
Subject: Results SDG: 13C051 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C051, thanks.
Hanh

-----Original Message-----
From: Jordana Scanlan [mailto:jscanlan@trevetinc.com]
Sent: Monday, March 18, 2013 11:23 AM
To: Hanh Bui
Cc: Ye Myint
Subject: RE: Question for sample IDs SDG: 13C051 & Samples Login SDG: 13C052 (TI 21&24)

I thought I got back to you on Thursday but I don't think the email went through. Please make sure all 24-TW-# have an hyphen. Thanks!

Jordy Bjorkman

From: Hanh Bui [mailto:HDBui@emaxlabs.com]
Sent: Thursday, March 14, 2013 11:08 AM
To: Jordana Scanlan; Gerald Tamashiro
Cc: Ye Myint
Subject: Question for sample IDs SDG: 13C051 & Samples Login SDG: 13C052 (TI 21&24)

Hi Jordy,
Please review the login samples received on 3/13.
SDG: 13C051
Do you want us to change sample IDs for all samples 24-TW# to 24-TW-# (with hyphen between TW and numbers, #2,5,6, 10 to 14)?
Please let us know, thanks.
Hanh

Hanh Bui

From: Jordana Scanlan [jscanlan@trevetinc.com]
Sent: Thursday, March 14, 2013 11:16 AM
To: Hanh Bui
Cc: Gerald Tamashiro; Ye Myint
Subject: Re: Question for sample IDs SDG: 13C051 & Samples Login SDG: 13C052 (TI 21&24)

Please do! Good looking out.

Sent from my iPhone

On Mar 14, 2013, at 11:09 AM, "Hanh Bui" <HDBui@emaxlabs.com> wrote:

> Hi Jordy,
> Please review the login samples received on 3/13.
> SDG: 13C051
> Do you want us to change sample IDs for all samples 24-TW# to 24-TW-#
> (with hyphen between TW and numbers, #2,5,6, 10 to 14)? Please let us
> know, thanks. Hanh
>
> <13C052.pdf>
> <13C051.pdf>

FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8022 7095 1929

Form ID No. 0200

CN

Recipient's Copy

1 From

Date 3/12/13 [redacted]

Sender's Name Jon Holstein Phone 858 790-9532

Company Tiere t

Address 9888 Carroll Centre Rd #228

Dept./Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Recieving Phone 310 618-8889

Company Emax Laboratories

Address 1835 W. 205th St.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address Torrance

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

☐ HOLD Weekday — FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

☐ HOLD Saturday — FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8022 7095 1929

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. *For packages over 150 lbs., use the new FedEx Express Freight US Airbill.*

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☒ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Obtain recip. Acct. No. ☐

[redacted]

Total Packages 1 Total Weight 46 lbs.

[redacted] Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

Temp. 3.0

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REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C051

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C051

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of fifteen (15) water samples were received on 03/13/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, three (3) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Three (3) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO03C03L/C were all within QC limits.
Percent recoveries for VO03C04L/C were all within QC limits.
Percent recoveries for VO03C05L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C051
Instrument ID : T-003

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V003C03B	1	NA	03/13/1309:55	03/13/1309:55	RCB038	RCB023	V003C03	Method Blank
LCS1W	V003C03L	1	NA	03/13/1308:15	03/13/1308:15	RCB035	RCB023	V003C03	Lab Control Sample (LCS)
LCD1W	V003C03C	1	NA	03/13/1308:48	03/13/1308:48	RCB036	RCB023	V003C03	LCS Duplicate
031213-ER-02	C051-15	1	NA	03/13/1314:04	03/13/1314:04	RCB042	RCB023	V003C03	Field Sample
24-TW-30-031113	C051-02	1	NA	03/13/1315:10	03/13/1315:10	RCB044	RCB023	V003C03	Field Sample
24-EW34-031113	C051-03	1	NA	03/13/1315:42	03/13/1315:42	RCB045	RCB023	V003C03	Field Sample
24-EW33-031113	C051-04	1	NA	03/13/1316:16	03/13/1316:16	RCB046	RCB023	V003C03	Field Sample
24-TW-52-031113	C051-05	1	NA	03/13/1316:49	03/13/1316:49	RCB047	RCB023	V003C03	Field Sample
24-TW-52-031113-D	C051-06	1	NA	03/13/1317:22	03/13/1317:22	RCB048	RCB023	V003C03	Field Sample
24-EW12-031213	C051-07	1	NA	03/13/1317:56	03/13/1317:56	RCB049	RCB023	V003C03	Field Sample
24-BB37-031213	C051-08	1	NA	03/13/1318:29	03/13/1318:29	RCB050	RCB023	V003C03	Field Sample
MBLK2W	V003C04B	1	NA	03/13/1321:53	03/13/1321:53	RCB056	RCB023	V003C04	Method Blank
LCS2W	V003C04L	1	NA	03/13/1320:11	03/13/1320:11	RCB053	RCB023	V003C04	Lab Control Sample (LCS)
LCD2W	V003C04C	1	NA	03/13/1320:46	03/13/1320:46	RCB054	RCB023	V003C04	LCS Duplicate
24-BB38-031213	C051-09	1	NA	03/13/1322:28	03/13/1322:28	RCB057	RCB023	V003C04	Field Sample
24-TW-49-031213	C051-10	1	NA	03/13/1323:01	03/13/1323:01	RCB058	RCB023	V003C04	Field Sample
24-TW-28-031213	C051-11	1	NA	03/13/1323:35	03/13/1323:35	RCB059	RCB023	V003C04	Field Sample
24-TW-28-031213-D	C051-12	1	NA	03/14/1300:08	03/14/1300:08	RCB060	RCB023	V003C04	Field Sample
24-TW-48-031213	C051-13	1	NA	03/14/1300:40	03/14/1300:40	RCB061	RCB023	V003C04	Field Sample
24-TW-11-031213	C051-14	1	NA	03/14/1301:13	03/14/1301:13	RCB062	RCB023	V003C04	Field Sample
MBLK3W	V003C05B	1	NA	03/14/1309:17	03/14/1309:17	RCB076	RCB023	V003C05	Method Blank
LCS3W	V003C05L	1	NA	03/14/1308:09	03/14/1308:09	RCB074	RCB023	V003C05	Lab Control Sample (LCS)
LCD3W	V003C05C	1	NA	03/14/1308:43	03/14/1308:43	RCB075	RCB023	V003C05	LCS Duplicate
031113-TB-02	C051-01R	1	NA	03/14/1309:51	03/14/1309:51	RCB077	RCB023	V003C05	Field Sample
24-TW-11-031213DL	C051-14T	10	NA	03/14/1310:25	03/14/1310:25	RCB078	RCB023	V003C05	Diluted Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 09:51
Sample ID:	031113-TB-02	Date Analyzed:	03/14/13 09:51
Lab Samp ID:	C051-01R	Dilution Factor:	1
Lab File ID:	RCB077	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.84	10.00	98.4	85-120
DIBROMOFLUOROMETHANE	9.91	10.00	99.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 15:10
Sample ID:	24-TW-30-031113	Date Analyzed:	03/13/13 15:10
Lab Samp ID:	C051-02	Dilution Factor:	1
Lab File ID:	RCB044	Matrix :	WATER
Ext Btch ID:	VO03C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.40J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	9.98	10.00	99.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 15:42
Sample ID:	24-EW34-031113	Date Analyzed:	03/13/13 15:42
Lab Samp ID:	C051-03	Dilution Factor:	1
Lab File ID:	RCB045	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.41J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.39J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.35J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.89	10.00	98.9	85-120
DIBROMOFLUOROMETHANE	9.77	10.00	97.7	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 16:16
Sample ID:	24-EW33-031113	Date Analyzed:	03/13/13 16:16
Lab Samp ID:	C051-04	Dilution Factor:	1
Lab File ID:	RCB046	Matrix :	WATER
Ext Btch ID:	VO03C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.87	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.63	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	9.93	10.00	99.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 16:49
Sample ID:	24-TW-52-031113	Date Analyzed:	03/13/13 16:49
Lab Samp ID:	C051-05	Dilution Factor:	1
Lab File ID:	RCB047	Matrix :	WATER
Ext Btch ID:	VO03C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.1	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.74	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-120
4-BROMOFLUOROBENZENE	9.90	10.00	99.0	75-120
TOLUENE-D8	9.38	10.00	93.8	85-120
DIBROMOFLUOROMETHANE	9.82	10.00	98.2	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 17:22
Sample ID:	24-TW-52-031113-D	Date Analyzed:	03/13/13 17:22
Lab Samp ID:	C051-06	Dilution Factor:	1
Lab File ID:	RCB048	Matrix :	WATER
Ext Btch ID:	VO03C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.0	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.67	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	9.91	10.00	99.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 17:56
Sample ID:	24-EW12-031213	Date Analyzed:	03/13/13 17:56
Lab Samp ID:	C051-07	Dilution Factor:	1
Lab File ID:	RCB049	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.30J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.36J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.99	10.00	99.9	85-120
DIBROMOFLUOROMETHANE	9.61	10.00	96.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 18:29
Sample ID:	24-BB37-031213	Date Analyzed:	03/13/13 18:29
Lab Samp ID:	C051-08	Dilution Factor:	1
Lab File ID:	RCB050	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	13	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.53	0.50	0.20
TRICHLOROETHENE	0.56	0.50	0.20
VINYL CHLORIDE	3.3	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.89	10.00	98.9	85-120
DIBROMOFLUOROMETHANE	9.56	10.00	95.6	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 22:28
Sample ID:	24-BB38-031213	Date Analyzed:	03/13/13 22:28
Lab Samp ID:	C051-09	Dilution Factor:	1
Lab File ID:	RCB057	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	26	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.55	0.50	0.20
TRICHLOROETHENE	1.3	0.50	0.20
VINYL CHLORIDE	11	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.7	10.00	117	70-120
4-BROMOFLUOROBENZENE	9.72	10.00	97.2	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 23:01
Sample ID:	24-TW-49-031213	Date Analyzed:	03/13/13 23:01
Lab Samp ID:	C051-10	Dilution Factor:	1
Lab File ID:	RCB058	Matrix :	WATER
Ext Btch ID:	VO03C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	4.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	9.85	10.00	98.5	85-120
DIBROMOFLUOROMETHANE	9.95	10.00	99.5	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 23:35
Sample ID:	24-TW-28-031213	Date Analyzed:	03/13/13 23:35
Lab Samp ID:	C051-11	Dilution Factor:	1
Lab File ID:	RCB059	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.80	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.74	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.45J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	9.96	10.00	99.6	75-120
TOLUENE-D8	10.5	10.00	105	85-120
DIBROMOFLUOROMETHANE	9.51	10.00	95.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 00:08
Sample ID:	24-TW-28-031213-D	Date Analyzed:	03/14/13 00:08
Lab Samp ID:	C051-12	Dilution Factor:	1
Lab File ID:	RCB060	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.85	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.72	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.45J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
4-BROMOFLUOROBENZENE	9.66	10.00	96.6	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 00:40
Sample ID:	24-TW-48-031213	Date Analyzed:	03/14/13 00:40
Lab Samp ID:	C051-13	Dilution Factor:	1
Lab File ID:	RCB061	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	31	0.50	0.20
TETRACHLOROETHENE	0.58	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.88	0.50	0.20
TRICHLOROETHENE	0.22J	0.50	0.20
VINYL CHLORIDE	28	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.81	10.00	98.1	85-120
DIBROMOFLUOROMETHANE	9.93	10.00	99.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 01:13 # 03/14/13 10:25
Sample ID:	24-TW-11-031213	Date Analyzed:	03/14/13 01:13 # 03/14/13 10:25
Lab Samp ID:	C051-14 #C051-14T	Dilution Factor:	1 # 10
Lab File ID:	RCB062 #RCB078	Matrix :	WATER
Ext Btch ID:	V003C04 #V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHENE	130	5.0	2.0
TETRACHLOROETHENE	47	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.4	0.50	0.20
TRICHLOROETHENE	59	0.50	0.20
VINYL CHLORIDE	52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.31	10.00	93.1	85-120
DIBROMOFLUOROMETHANE	9.88	10.00	98.8	85-115
# 1,2-DICHLOROETHANE-D4	114	100.0	114	70-120
# 4-BROMOFLUOROBENZENE	103	100.0	103	75-120
# TOLUENE-D8	97.7	100.0	97.7	85-120
# DIBROMOFLUOROMETHANE	99.3	100.0	99.3	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 01:13
Sample ID:	24-TW-11-031213	Date Analyzed:	03/14/13 01:13
Lab Samp ID:	C051-14	Dilution Factor:	1
Lab File ID:	RCB062	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	120E	0.50	0.20
TETRACHLOROETHENE	47	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.4	0.50	0.20
TRICHLOROETHENE	59	0.50	0.20
VINYL CHLORIDE	52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.31	10.00	93.1	85-120
DIBROMOFLUOROMETHANE	9.88	10.00	98.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/14/13 10:25
Sample ID:	24-TW-11-031213DL	Date Analyzed:	03/14/13 10:25
Lab Samp ID:	C051-14T	Dilution Factor:	10
Lab File ID:	RCB078	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	130	5.0	2.0
TETRACHLOROETHENE	53	5.0	2.0
TRANS-1,2-DICHLOROETHENE	ND	5.0	2.0
TRICHLOROETHENE	60	5.0	2.0
VINYL CHLORIDE	52	5.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	114	100.0	114	70-120
4-BROMOFLUOROBENZENE	103	100.0	103	75-120
TOLUENE-D8	97.7	100.0	97.7	85-120
DIBROMOFLUOROMETHANE	99.3	100.0	99.3	85-115

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\13C14\RCB078.D Vial: 7
Acq On : 14 Mar 2013 10:25 am Operator: CGM
Sample : 13C051-14T 2.5mL Inst : 03
Misc : DF=10 Multiplr: 1.00
MS Integration Params: 524INT.P
Quant Time: Mar 16 6:45 2013 Quant Results File: VO03C12.RES

Quant Method : D:\HPCHEM\1\METHODS\VO03C12.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Mar 14 09:24:18 2013
Response via : Initial Calibration
DataAcq Meth : VO03C12

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.12	114	2777377	10.00 ug/l	0.00
52) CHLOROBENZENE-D5	17.11	117	2517906	10.00 ug/l	0.00
70) 1,2-DICHLOROBENZENE-D4	20.63	152	829808	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	12.03	111	907227	9.93 ug/l	0.00
Spiked Amount 10.000			Recovery	= 99.30%	
39) 1,2-Dichloroethane-d4	12.56	65	822703	11.44 ug/l	0.00
Spiked Amount 10.000			Recovery	= 114.40%	
53) Toluene-d8	15.18	98	3511184	9.77 ug/l	0.00
Spiked Amount 10.000			Recovery	= 97.70%	
73) 4-Bromofluorobenzene	18.57	95	1184462	10.30 ug/l	0.02
Spiked Amount 10.000			Recovery	= 103.00%	
Target Compounds					Qvalue
5) Vinyl chloride	4.89	62	413485	5.19 ug/l	99
21) trans-1,2-Dichloroethene	9.49	61	22057	0.13 ug/l	94
29) cis-1,2-Dichloroethene	11.27	96	1515782	13.25 ug/l	98
43) Trichloroethene	13.54	130	662775	6.04 ug/l	99
58) Tetrachloroethene	16.01	164	506305	5.31 ug/l	96

(#) = qualifier out of range (m) = manual integration

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 14:04
Sample ID:	031213-ER-02	Date Analyzed:	03/13/13 14:04
Lab Samp ID:	C051-15	Dilution Factor:	1
Lab File ID:	RCB042	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.72	10.00	97.2	85-120
DIBROMOFLUOROMETHANE	9.77	10.00	97.7	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 09:55
Sample ID:	MBLK1W	Date Analyzed:	03/13/13 09:55
Lab Samp ID:	V003C03B	Dilution Factor:	1
Lab File ID:	RCB038	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.65	10.00	96.5	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C051
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V003C03B	V003C03L	V003C03C		
LAB FILE ID:	RCB038	RCB035	RCB036		
DATE EXTRACTED:	03/13/1309:55	03/13/1308:15	03/13/1308:48	DATE COLLECTED:	NA
DATE ANALYZED:	03/13/1309:55	03/13/1308:15	03/13/1308:48	DATE RECEIVED:	03/13/13
PREP. BATCH:	V003C03	V003C03	V003C03		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.82	88	10.0	8.74	87	1	70-125	30
Tetrachloroethene	ND	10.0	10.0	100	10.0	9.51	95	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.2	102	10.0	9.53	95	7	60-140	30
Trichloroethene	ND	10.0	9.80	98	10.0	9.43	94	4	70-125	30
Vinyl Chloride	ND	10.0	10.3	103	10.0	9.40	94	9	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.3	103	10.0	10.5	105	70-120
4-Bromofluorobenzene	10.0	9.91	99	10.0	9.76	98	75-120
Toluene-d8	10.0	10.0	100	10.0	9.77	98	85-120
Dibromofluoromethane	10.0	9.72	97	10.0	9.88	99	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C051	Date Extracted:	03/13/13 21:53
Sample ID:	MBLK2W	Date Analyzed:	03/13/13 21:53
Lab Samp ID:	VO03C04B	Dilution Factor:	1
Lab File ID:	RCB056	Matrix :	WATER
Ext Btch ID:	VO03C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.94	10.00	99.4	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C051
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V003C04B	V003C04L	V003C04C		
LAB FILE ID:	RCB056	RCB053	RCB054		
DATE EXTRACTED:	03/13/1321:53	03/13/1320:11	03/13/1320:46	DATE COLLECTED:	NA
DATE ANALYZED:	03/13/1321:53	03/13/1320:11	03/13/1320:46	DATE RECEIVED:	03/13/13
PREP. BATCH:	V003C04	V003C04	V003C04		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.39	94	10.0	9.61	96	2	70-125	30
Tetrachloroethene	ND	10.0	9.48	95	10.0	9.93	99	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.4	104	10.0	10.5	105	0	60-140	30
Trichloroethene	ND	10.0	9.96	100	10.0	10.1	101	1	70-125	30
Vinyl Chloride	ND	10.0	9.77	98	10.0	9.71	97	1	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.4	104	10.0	10.7	107	70-120
4-Bromofluorobenzene	10.0	9.97	100	10.0	9.74	97	75-120
Toluene-d8	10.0	9.57	96	10.0	10.1	101	85-120
Dibromofluoromethane	10.0	9.42	94	10.0	9.93	99	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/14/13
Batch No.	: 13C051	Date Extracted:	03/14/13 09:17
Sample ID:	MBLK3W	Date Analyzed:	03/14/13 09:17
Lab Samp ID:	V003C05B	Dilution Factor:	1
Lab File ID:	RCB076	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.68	10.00	96.8	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C051
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK3W				
LAB SAMP ID:	V003C05B	V003C05L	V003C05C		
LAB FILE ID:	RCB076	RCB074	RCB075		
DATE EXTRACTED:	03/14/1309:17	03/14/1308:09	03/14/1308:43	DATE COLLECTED:	NA
DATE ANALYZED:	03/14/1309:17	03/14/1308:09	03/14/1308:43	DATE RECEIVED:	03/14/13
PREP. BATCH:	V003C05	V003C05	V003C05		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.01	90	10.0	9.30	93	3	70-125	30
Tetrachloroethene	ND	10.0	9.36	94	10.0	9.63	96	3	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.72	97	10.0	9.90	99	2	60-140	30
Trichloroethene	ND	10.0	9.57	96	10.0	9.86	99	3	70-125	30
Vinyl Chloride	ND	10.0	9.76	98	10.0	10.1	101	3	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.7	107	10.0	10.3	103	70-120
4-Bromofluorobenzene	10.0	10.4	104	10.0	10.3	103	75-120
Toluene-d8	10.0	10.0	100	10.0	9.97	100	85-120
Dibromofluoromethane	10.0	9.64	96	10.0	9.47	95	85-115

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND 21 & 24**

SDG: **13C052**

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METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-29-2013
EMAX Batch No.: 13C052

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego, CA 92126

Subject: Laboratory Report
Project: Treasure Island 21 & 24

Enclosed is the Laboratory report for samples received on 03/13/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
24-TW-41-031213	C052-01	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW4-031213	C052-02	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW4-031213-D	C052-03	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW11-031213	C052-04	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW32-031213	C052-05	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW32-031213-D	C052-06	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-53-031213	C052-07	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-53-031213-D	C052-08	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
031113-TB-01	C052-09	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-26-031113	C052-10	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-44-031113	C052-11	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-36-031113	C052-12	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-TW-40-031113	C052-13	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW-36-031113	C052-14	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
031113-ER-01	C052-15	03/11/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB108-031213	C052-16	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-BB108-031213-D	C052-17	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS
24-EW18-031213	C052-18	03/12/13	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER 031213-4
13C052

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Sites 21 and 24	Send Invoice to Trevet
PROJECT LOCATION	PROJECT NO.
NAVSTA Treasure Island	A083
SAMPLER NAME	AIRBILL NUMBER
Jon Hobstein	802270951929
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
Gerald Tamashiro - TREVET	(714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY)

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
1	24-TW-41-031215	3/12/13	1100	3		X	W	10	X	
2	24-EW4-031213	3/12/13	1155	3	X		W	10	X	
3	24-EW4-031213-D	3/12/13	1200	3	X		W	10	X	
4	24-EW11-031213	3/12/13	1350	3	X		W	10	X	
5	24-EW32-031213	3/12/13	1445	3	X		W	10	X	
6	24-EW32-031213-D	3/12/13	1450	3	X		W	10	X	
7	24-TW-53-031213	3/12/13	1535	3	X		W	10	X	
8	24-TW-53-031213-D	3/12/13	1540	3	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY: Trevet	TIME: 1800	COMPANY
RELINQUISHED BY (Signature)	DATE: 3/13/13	RECEIVED BY (Signature)
COMPANY	TIME: 09:00	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.3°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

1001

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

CHAIN-OF-CUSTODY RECORD

COC NUMBER 031213-3
13C052

PROJECT NAME: Treasure Island Sites 21 and 24	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A083
SAMPLER NAME: Jon Holstein	AIRBILL NUMBER: 802270951929
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889
LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs - project list (8260B)	COMMENTS
9	031113-TB-01	3/11/13	1400	3	X		W	10	X	
10	24-TW-26-031113	3/11/13	1435	3	X		W	10	X	
11	24-TW-44-031113	3/11/13	1525	3		X	W	10	X	
12	24-TW-36-031113	3/11/13	1620	3	X		W	10	X	
13	24-TW-40-031113	3/11/13	1715	3	X		W	10	X	
14	24-EW-36-031113	3/11/13	1805	3	X		W	10	X	
15	031113-ER-01	3/11/13	1830	3	X		W	10	X	
16	24-BB108-031213	3/12/13	0925	3	X		W	10	X	
17	24-BB108-031213-D	3/12/13	0930	3	X		W	10	X	
18	24-EW18-031213	3/12/13	1015	3	X		W	10	X	

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	3/12/13	
COMPANY: Trevet	TIME: 1800	COMPANY:
RELINQUISHED BY (Signature)	DATE: 3/13/13	RECEIVED BY (Signature): [signature]
COMPANY	TIME: 09:00	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.3°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:
4th Quarter 2012 Treasure Island Sites 21 and 24 GW Sampling

1002

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 13 C052
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8022 1095 1929	Recipient I. Plate
☐ EMAX Courier ☐ Client Delivery		Date 3/13/13 Time 0900

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other _____		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged _____		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≈6 °C but not frozen)	D ☑ Cooler 1 3.3 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 3/13/13

[signature] 3/13/13

SRF [signature] Date 3/13/13

PM HMB Date 3/14/15

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

Hanh Bui

From: Hanh Bui
Sent: Monday, March 25, 2013 11:59 AM
To: 'Jordana Scanlan'; Gerald Tamashiro
Cc: Ye Myint
Subject: Results SDG: 13C052 (TI 21&24)

Hi Jordy,
Attached please find the results for 13C052, thanks.
Hanh

-----Original Message-----
From: Jordana Scanlan [mailto:jscanlan@trevetinc.com]
Sent: Monday, March 18, 2013 11:23 AM
To: Hanh Bui
Cc: Ye Myint
Subject: RE: Question for sample IDs SDG: 13C051 & Samples Login SDG: 13C052 (TI 21&24)

I thought I got back to you on Thursday but I don't think the email went through. Please make sure all 24-TW-# have an hyphen. Thanks!

Jordy Bjorkman

From: Hanh Bui [mailto:HDBui@emaxlabs.com]
Sent: Thursday, March 14, 2013 11:08 AM
To: Jordana Scanlan; Gerald Tamashiro
Cc: Ye Myint
Subject: Question for sample IDs SDG: 13C051 & Samples Login SDG: 13C052 (TI 21&24)

Hi Jordy,
Please review the login samples received on 3/13.
SDG: 13C051
Do you want us to change sample IDs for all samples 24-TW# to 24-TW-# (with hyphen between TW and numbers, #2,5,6, 10 to 14)?
Please let us know, thanks.
Hanh

FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8022 7095 1929

Form ID No. 0200

CN

Recipient's Copy

1 From

Date 3/12/13 [redacted]

Sender's Name Jon Holstein Phone 858 790-9532

Company Trevet

Address 9888 Carroll Centre Rd #228 Dept/Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Recieving Phone 310 618-8889

Company Emax Laboratories

Address 1835 W. 205th St. Dept/Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Torrance

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight. ☐

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. ☐

8022 7095 1929

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

[redacted] [redacted] Credit Card Auth.

Total Packages 1 Total Weight 46 lbs.

†Our liability is limited to US$100 unless you declare a higher value. See the Current FedEx Service Guide for details.

temp. 3.0 644

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FedEx Customer Service 1.800.463.3339

1065

ORIGIN ID:JCCA (858) 578-8859
TREVET

9888 CARROLL CENTRE RD

SAN DIEGO, CA 921264579
UNITED STATES US

SHIP DATE: 12MAR13
ACTWGT: 45.6 LB
CAD: /OFFC1322
DIMS: 21x16x16 IN

BILL SENDER

TO **SAMPLE RECIEVING**
EMAX LABORATORIES
1835 W 20TH ST

TORRANCE CA 90501
(310) 618-8889
INV:
PO: REF:
DEPT:

FedEx
Express

J13101212190126

TRK# 0200 **8022 7095 1929**

WED - 13 MAR 10:30A
PRIORITY OVERNIGHT

92 HHRA

90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND 21 & 24

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13C052

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND 21 & 24

SDG : 13C052

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of eighteen (18) water samples were received on 03/13/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, (Version 4.2, Oct/25/2010).

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blanks were analyzed at the frequency required by the project. For this SDG, three (3) method blanks were analyzed with the samples. All results were compliant to project requirement. Refer to QC result summary forms for details.

Lab Control Sample
Three (3) sets of LCS/LCD were analyzed with the samples in this SDG.
Percent recoveries for VO03C03L/C were all within QC limits.
Percent recoveries for VO03C04L/C were all within QC limits.
Percent recoveries for VO03C05L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND 21 & 24

SDG NO. : 13C052
Instrument ID : T-003

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V003C03B	1	NA	03/13/1309:55	03/13/1309:55	RCB038	RCB023	V003C03	Method Blank
LCS1W	V003C03L	1	NA	03/13/1308:15	03/13/1308:15	RCB035	RCB023	V003C03	Lab Control Sample (LCS)
LCD1W	V003C03C	1	NA	03/13/1308:48	03/13/1308:48	RCB036	RCB023	V003C03	LCS Duplicate
031113-TB-01	C052-09	1	NA	03/13/1313:31	03/13/1313:31	RCB041	RCB023	V003C03	Field Sample
031113-ER-01	C052-15	1	NA	03/13/1314:37	03/13/1314:37	RCB043	RCB023	V003C03	Field Sample
MBLK2W	V003C04B	1	NA	03/13/1321:53	03/13/1321:53	RCB056	RCB023	V003C04	Method Blank
LCS2W	V003C04L	1	NA	03/13/1320:11	03/13/1320:11	RCB053	RCB023	V003C04	Lab Control Sample (LCS)
LCD2W	V003C04C	1	NA	03/13/1320:46	03/13/1320:46	RCB054	RCB023	V003C04	LCS Duplicate
24-TW-41-031213	C052-01	1	NA	03/14/1301:46	03/14/1301:46	RCB063	RCB023	V003C04	Field Sample
24-EW4-031213	C052-02	1	NA	03/14/1302:19	03/14/1302:19	RCB064	RCB023	V003C04	Field Sample
24-EW4-031213-D	C052-03	1	NA	03/14/1302:53	03/14/1302:53	RCB065	RCB023	V003C04	Field Sample
24-EW11-031213	C052-04	1	NA	03/14/1303:26	03/14/1303:26	RCB066	RCB023	V003C04	Field Sample
24-EW32-031213	C052-05	1	NA	03/14/1304:01	03/14/1304:01	RCB067	RCB023	V003C04	Field Sample
24-EW32-031213-D	C052-06	1	NA	03/14/1304:35	03/14/1304:35	RCB068	RCB023	V003C04	Field Sample
24-TW-53-031213	C052-07	1	NA	03/14/1305:08	03/14/1305:08	RCB069	RCB023	V003C04	Field Sample
24-TW-53-031213-D	C052-08	1	NA	03/14/1305:42	03/14/1305:42	RCB070	RCB023	V003C04	Field Sample
MBLK3W	V003C05B	1	NA	03/14/1309:17	03/14/1309:17	RCB076	RCB023	V003C05	Method Blank
LCS3W	V003C05L	1	NA	03/14/1308:09	03/14/1308:09	RCB074	RCB023	V003C05	Lab Control Sample (LCS)
LCD3W	V003C05C	1	NA	03/14/1308:43	03/14/1308:43	RCB075	RCB023	V003C05	LCS Duplicate
24-EW11-031213DL	C052-04T	50	NA	03/14/1310:59	03/14/1310:59	RCB079	RCB023	V003C05	Diluted Sample
24-TW-26-031113	C052-10	1	NA	03/14/1312:39	03/14/1312:39	RCB082	RCB023	V003C05	Field Sample
24-TW-44-031113	C052-11	1	NA	03/14/1314:20	03/14/1314:20	RCB085	RCB023	V003C05	Field Sample
24-TW-36-031113	C052-12	1	NA	03/14/1314:53	03/14/1314:53	RCB086	RCB023	V003C05	Field Sample
24-TW-40-031113	C052-13	1	NA	03/14/1315:26	03/14/1315:26	RCB087	RCB023	V003C05	Field Sample
24-EW-36-031113	C052-14	1	NA	03/14/1316:01	03/14/1316:01	RCB088	RCB023	V003C05	Field Sample
24-BB108-031213	C052-16	1	NA	03/14/1316:36	03/14/1316:36	RCB089	RCB023	V003C05	Field Sample
24-BB108-031213-D	C052-17	1	NA	03/14/1317:11	03/14/1317:11	RCB090	RCB023	V003C05	Field Sample
24-EW18-031213	C052-18	1	NA	03/14/1317:46	03/14/1317:46	RCB091	RCB023	V003C05	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 01:46
Sample ID:	24-TW-41-031213	Date Analyzed:	03/14/13 01:46
Lab Samp ID:	C052-01	Dilution Factor:	1
Lab File ID:	RCB063	Matrix	: WATER
Ext Btch ID:	V003C04	% Moisture	: NA
Calib. Ref.:	RCB023	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	23	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.23J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	32	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.74	10.00	97.4	85-120
DIBROMOFLUOROMETHANE	9.82	10.00	98.2	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 02:19
Sample ID:	24-EW4-031213	Date Analyzed:	03/14/13 02:19
Lab Samp ID:	C052-02	Dilution Factor:	1
Lab File ID:	RCB064	Matrix	: WATER
Ext Btch ID:	V003C04	% Moisture	: NA
Calib. Ref.:	RCB023	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	3.1	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.36J	0.50	0.20
VINYL CHLORIDE	0.52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	9.99	10.00	99.9	75-120
TOLUENE-D8	9.92	10.00	99.2	85-120
DIBROMOFLUOROMETHANE	10.0	10.00	100	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 02:53
Sample ID:	24-EW4-031213-D	Date Analyzed:	03/14/13 02:53
Lab Samp ID:	C052-03	Dilution Factor:	1
Lab File ID:	RCB065	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	3.1	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.35J	0.50	0.20
VINYL CHLORIDE	0.50J	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	9.90	10.00	99.0	85-120
DIBROMOFLUOROMETHANE	9.75	10.00	97.5	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 03:26 # 03/14/13 10:59
Sample ID:	24-EW11-031213	Date Analyzed:	03/14/13 03:26 # 03/14/13 10:59
Lab Samp ID:	C052-04 #C052-04T	Dilution Factor:	1 # 50
Lab File ID:	RCB066 #RCB079	Matrix :	WATER
Ext Btch ID:	V003C04 #V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHENE	3000	25	10
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	10	0.50	0.20
TRICHLOROETHENE	1.7	0.50	0.20
# VINYL CHLORIDE	1300	25	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	9.78	10.00	97.8	85-120
DIBROMOFLUOROMETHANE	9.48	10.00	94.8	85-115
# 1,2-DICHLOROETHANE-D4	576	500.0	115	70-120
# 4-BROMOFLUOROBENZENE	510	500.0	102	75-120
# TOLUENE-D8	505	500.0	101	85-120
# DIBROMOFLUOROMETHANE	506	500.0	101	85-115

Members of the Associated File

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 03:26
Sample ID:	24-EW11-031213	Date Analyzed:	03/14/13 03:26
Lab Samp ID:	C052-04	Dilution Factor:	1
Lab File ID:	RCB066	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	200E	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	10	0.50	0.20
TRICHLOROETHENE	1.7	0.50	0.20
VINYL CHLORIDE	700E	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	9.78	10.00	97.8	85-120
DIBROMOFLUOROMETHANE	9.48	10.00	94.8	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 10:59
Sample ID:	24-EW11-031213DL	Date Analyzed:	03/14/13 10:59
Lab Samp ID:	C052-04T	Dilution Factor:	50
Lab File ID:	RCB079	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	3000	25	10
TETRACHLOROETHENE	ND	25	10
TRANS-1,2-DICHLOROETHENE	11J	25	10
TRICHLOROETHENE	ND	25	10
VINYL CHLORIDE	1300	25	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	576	500.0	115	70-120
4-BROMOFLUOROBENZENE	510	500.0	102	75-120
TOLUENE-D8	505	500.0	101	85-120
DIBROMOFLUOROMETHANE	506	500.0	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 04:01
Sample ID:	24-EW32-031213	Date Analyzed:	03/14/13 04:01
Lab Samp ID:	C052-05	Dilution Factor:	1
Lab File ID:	RCB067	Matrix	: WATER
Ext Btch ID:	V003C04	% Moisture	: NA
Calib. Ref.:	RCB023	Instrument ID	: T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	55	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.54	0.50	0.20
TRICHLOROETHENE	2.7	0.50	0.20
VINYL CHLORIDE	75	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.91	10.00	99.1	85-120
DIBROMOFLUOROMETHANE	9.81	10.00	98.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 04:35
Sample ID:	24-EW32-031213-D	Date Analyzed:	03/14/13 04:35
Lab Samp ID:	C052-06	Dilution Factor:	1
Lab File ID:	RCB068	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	57	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.53	0.50	0.20
TRICHLOROETHENE	2.7	0.50	0.20
VINYL CHLORIDE	78	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.67	10.00	96.7	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 05:08
Sample ID:	24-TW-53-031213	Date Analyzed:	03/14/13 05:08
Lab Samp ID:	C052-07	Dilution Factor:	1
Lab File ID:	RCB069	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.7	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.69	0.50	0.20
VINYL CHLORIDE	0.61	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.87	10.00	98.7	85-120
DIBROMOFLUOROMETHANE	9.83	10.00	98.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 05:42
Sample ID:	24-TW-53-031213-D	Date Analyzed:	03/14/13 05:42
Lab Samp ID:	C052-08	Dilution Factor:	1
Lab File ID:	RCB070	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.6	0.50	0.20
TETRACHLOROETHENE	0.20J	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.66	0.50	0.20
VINYL CHLORIDE	0.52	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	9.63	10.00	96.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/13/13 13:31
Sample ID:	031113-TB-01	Date Analyzed:	03/13/13 13:31
Lab Samp ID:	C052-09	Dilution Factor:	1
Lab File ID:	RCB041	Matrix :	WATER
Ext Btch ID:	VO03C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.3	10.00	103	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 12:39
Sample ID:	24-TW-26-031113	Date Analyzed:	03/14/13 12:39
Lab Samp ID:	C052-10	Dilution Factor:	1
Lab File ID:	RCB082	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	0.32J	0.50	0.20
VINYL CHLORIDE	1.7	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 14:20
Sample ID:	24-TW-44-031113	Date Analyzed:	03/14/13 14:20
Lab Samp ID:	C052-11	Dilution Factor:	1
Lab File ID:	RCB085	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.45J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.66	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.71	10.00	97.1	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 14:53
Sample ID:	24-TW-36-031113	Date Analyzed:	03/14/13 14:53
Lab Samp ID:	C052-12	Dilution Factor:	1
Lab File ID:	RCB086	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.30J	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.5	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	0.66	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.8	10.00	118	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 15:26
Sample ID:	24-TW-40-031113	Date Analyzed:	03/14/13 15:26
Lab Samp ID:	C052-13	Dilution Factor:	1
Lab File ID:	RCB087	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	0.82	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	1.3	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	9.93	10.00	99.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 16:01
Sample ID:	24-EW-36-031113	Date Analyzed:	03/14/13 16:01
Lab Samp ID:	C052-14	Dilution Factor:	1
Lab File ID:	RCB088	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.23J	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	1.7	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.88	10.00	98.8	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/11/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/13/13 14:37
Sample ID:	031113-ER-01	Date Analyzed:	03/13/13 14:37
Lab Samp ID:	C052-15	Dilution Factor:	1
Lab File ID:	RCB043	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	10.4	10.00	104	85-120
DIBROMOFLUOROMETHANE	10.0	10.00	100	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 16:36
Sample ID:	24-BB108-031213	Date Analyzed:	03/14/13 16:36
Lab Samp ID:	C052-16	Dilution Factor:	1
Lab File ID:	RCB089	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	5.4	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.22J	0.50	0.20
TRICHLOROETHENE	1.8	0.50	0.20
VINYL CHLORIDE	2.0	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.91	10.00	99.1	85-120
DIBROMOFLUOROMETHANE	9.73	10.00	97.3	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 17:11
Sample ID:	24-BB108-031213-D	Date Analyzed:	03/14/13 17:11
Lab Samp ID:	C052-17	Dilution Factor:	1
Lab File ID:	RCB090	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	5.4	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.23J	0.50	0.20
TRICHLOROETHENE	1.9	0.50	0.20
VINYL CHLORIDE	2.1	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.8	10.00	118	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	03/12/13
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/14/13 17:46
Sample ID:	24-EW18-031213	Date Analyzed:	03/14/13 17:46
Lab Samp ID:	C052-18	Dilution Factor:	1
Lab File ID:	RCB091	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	1.3	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	1.5	0.50	0.20
TRICHLOROETHENE	1.5	0.50	0.20
VINYL CHLORIDE	1.2	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	9.55	10.00	95.5	85-120
DIBROMOFLUOROMETHANE	9.63	10.00	96.3	85-115

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/13/13 09:55
Sample ID:	MBLK1W	Date Analyzed:	03/13/13 09:55
Lab Samp ID:	V003C03B	Dilution Factor:	1
Lab File ID:	RCB038	Matrix :	WATER
Ext Btch ID:	V003C03	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.65	10.00	96.5	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C052
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V003C03B	V003C03L	V003C03C		
LAB FILE ID:	RCB038	RCB035	RCB036		
DATE EXTRACTED:	03/13/1309:55	03/13/1308:15	03/13/1308:48	DATE COLLECTED:	NA
DATE ANALYZED:	03/13/1309:55	03/13/1308:15	03/13/1308:48	DATE RECEIVED:	03/13/13
PREP. BATCH:	V003C03	V003C03	V003C03		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.82	88	10.0	8.74	87	1	70-125	30
Tetrachloroethene	ND	10.0	10.0	100	10.0	9.51	95	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.2	102	10.0	9.53	95	7	60-140	30
Trichloroethene	ND	10.0	9.80	98	10.0	9.43	94	4	70-125	30
Vinyl Chloride	ND	10.0	10.3	103	10.0	9.40	94	9	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.3	103	10.0	10.5	105	70-120
4-Bromofluorobenzene	10.0	9.91	99	10.0	9.76	98	75-120
Toluene-d8	10.0	10.0	100	10.0	9.77	98	85-120
Dibromofluoromethane	10.0	9.72	97	10.0	9.88	99	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/13/13
Batch No.	: 13C052	Date Extracted:	03/13/13 21:53
Sample ID:	MBLK2W	Date Analyzed:	03/13/13 21:53
Lab Samp ID:	V003C04B	Dilution Factor:	1
Lab File ID:	RCB056	Matrix :	WATER
Ext Btch ID:	V003C04	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.94	10.00	99.4	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C052
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V003C04B	V003C04L	V003C04C		
LAB FILE ID:	RCB056	RCB053	RCB054		
DATE EXTRACTED:	03/13/1321:53	03/13/1320:11	03/13/1320:46	DATE COLLECTED:	NA
DATE ANALYZED:	03/13/1321:53	03/13/1320:11	03/13/1320:46	DATE RECEIVED:	03/13/13
PREP. BATCH:	V003C04	V003C04	V003C04		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.39	94	10.0	9.61	96	2	70-125	30
Tetrachloroethene	ND	10.0	9.48	95	10.0	9.93	99	5	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.4	104	10.0	10.5	105	0	60-140	30
Trichloroethene	ND	10.0	9.96	100	10.0	10.1	101	1	70-125	30
Vinyl Chloride	ND	10.0	9.77	98	10.0	9.71	97	1	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.4	104	10.0	10.7	107	70-120
4-Bromofluorobenzene	10.0	9.97	100	10.0	9.74	97	75-120
Toluene-d8	10.0	9.57	96	10.0	10.1	101	85-120
Dibromofluoromethane	10.0	9.42	94	10.0	9.93	99	85-115

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND 21 & 24	Date Received:	03/14/13
Batch No.	: 13C052	Date Extracted:	03/14/13 09:17
Sample ID:	MBLK3W	Date Analyzed:	03/14/13 09:17
Lab Samp ID:	V003C05B	Dilution Factor:	1
Lab File ID:	RCB076	Matrix :	WATER
Ext Btch ID:	V003C05	% Moisture :	NA
Calib. Ref.:	RCB023	Instrument ID :	T-003

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL CHLORIDE	ND	0.50	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	9.68	10.00	96.8	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND 21 & 24
BATCH NO.: 13C052
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK3W				
LAB SAMP ID:	V003C05B	V003C05L	V003C05C		
LAB FILE ID:	RCB076	RCB074	RCB075		
DATE EXTRACTED:	03/14/1309:17	03/14/1308:09	03/14/1308:43	DATE COLLECTED:	NA
DATE ANALYZED:	03/14/1309:17	03/14/1308:09	03/14/1308:43	DATE RECEIVED:	03/14/13
PREP. BATCH:	V003C05	V003C05	V003C05		
CALIB. REF:	RCB023	RCB023	RCB023		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.01	90	10.0	9.30	93	3	70-125	30
Tetrachloroethene	ND	10.0	9.36	94	10.0	9.63	96	3	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	9.72	97	10.0	9.90	99	2	60-140	30
Trichloroethene	ND	10.0	9.57	96	10.0	9.86	99	3	70-125	30
Vinyl Chloride	ND	10.0	9.76	98	10.0	10.1	101	3	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.7	107	10.0	10.3	103	70-120
4-Bromofluorobenzene	10.0	10.4	104	10.0	10.3	103	75-120
Toluene-d8	10.0	10.0	100	10.0	9.97	100	85-120
Dibromofluoromethane	10.0	9.64	96	10.0	9.47	95	85-115

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

April 16, 2013

SUBJECT: Treasure Island, IR Sites 21 & 24, Data Validation

Dear Mrs. Bjorkman,

Enclosed is the final validation report and Excel qualification sheet for the fractions listed below. These SDGs were received on April 03, 2013.

LDC project # 29456:

SDG #s	Fraction
13C012, 13C013 13C029, 13C030 13C031, 13C032 13C036, 13C051 13C052	Volatiles (EPA SW 846 Method 8260B)

The following deliverables are submitted under this report:

- Attachment I — Sample ID Cross Reference and Data Review Level
- Attachment II — Overall Data Qualification Summary
- Enclosure I — EPA Level III ADR Outliers (including manual review outliers)
- Enclosure II — EPA Level IV DVR (manual review)

The data validation was performed in accordance to the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008. Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience. The following items were evaluated during the review:

- Holding Times
- Sample Preservation
- Cooler Temperatures
- Initial Calibration (Manual Review)
- Continuing Calibration (Manual Review)
- Blanks
- Surrogates
- Internal Standards (Manual Review)
- Matrix Spike/Matrix Spike Duplicates

- Laboratory Control Samples
- Detection and Quantitation Limits
- Field QC Samples

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Chemist

Attachment I

Sample ID Cross Reference and Data Review Level

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Mar-2013	030413-TB-01	C013-04	TB	5030B	8260B	3
04-Mar-2013	030413-TB-03	C012-01	TB	5030B	8260B	3
04-Mar-2013	030413-TB-04	C012-12	TB	5030B	8260B	3
04-Mar-2013	21-MW13-030413	C012-02	N	5030B	8260B	4
04-Mar-2013	21-MW09B-030413	C013-09	N	5030B	8260B	3
04-Mar-2013	21-MW03B-030413	C012-13	N	5030B	8260B	4
04-Mar-2013	21-IP04-030413	C013-01	N	5030B	8260B	3
04-Mar-2013	21-MW03A-030413	C012-14	N	5030B	8260B	3
04-Mar-2013	21-IP19-030413	C013-10	N	5030B	8260B	3
04-Mar-2013	21-IP19-030413MS	C013-10M	MS	5030B	8260B	3
04-Mar-2013	21-IP19-030413MSD	C013-10S	MSD	5030B	8260B	3
04-Mar-2013	21-IP36-030413	C012-03	N	5030B	8260B	3
04-Mar-2013	21-IP03-030413	C013-02	N	5030B	8260B	4
04-Mar-2013	21-MW04B-030413	C012-15	N	5030B	8260B	3
04-Mar-2013	21-MW05-030413	C012-04R	N	5030B	8260B	3
04-Mar-2013	030413-TB-02	C013-08	TB	5030B	8260B	3
04-Mar-2013	030413-ER-01	C013-03	ER	5030B	8260B	3
04-Mar-2013	030413-SB-03	C012-05	SB	5030B	8260B	3
05-Mar-2013	21-MW04A-030513	C012-06	N	5030B	8260B	3
05-Mar-2013	21-MW02B-030513	C013-05	N	5030B	8260B	3
05-Mar-2013	21-MW14-030513	C013-11	N	5030B	8260B	4
05-Mar-2013	21-MW11A-030513	C012-16	N	5030B	8260B	3
05-Mar-2013	21-MW11A-030513MS	C012-16M	MS	5030B	8260B	3
05-Mar-2013	21-MW11A-030513MSD	C012-16S	MSD	5030B	8260B	3
05-Mar-2013	21-MW07A1-030513	C012-07	N	5030B	8260B	3
05-Mar-2013	21-MW02A-030513	C013-06	N	5030B	8260B	4

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
05-Mar-2013	21-MW02A-030513	C013-06T	N	5030B	8260B	4
05-Mar-2013	21-MW02A-030513-D	C013-07	FD	5030B	8260B	3
05-Mar-2013	21-MW02A-030513-D	C013-07T	FD	5030B	8260B	3
05-Mar-2013	21-MW07A2-030513	C012-08	N	5030B	8260B	3
05-Mar-2013	21-IP17-030513	C013-12	N	5030B	8260B	3
05-Mar-2013	21-MW11B-030513	C012-17	N	5030B	8260B	3
05-Mar-2013	21-MW07A3-030513	C012-09	N	5030B	8260B	3
05-Mar-2013	21-MW07A3-030513-D	C012-10	FD	5030B	8260B	3
05-Mar-2013	24-BB96-030513	C012-11	N	5030B	8260B	3
05-Mar-2013	24-BB96-030513MS	C012-11M	MS	5030B	8260B	3
05-Mar-2013	24-BB96-030513MSD	C012-11S	MSD	5030B	8260B	3
05-Mar-2013	24-BB94-030513	C013-13	N	5030B	8260B	3
05-Mar-2013	24-BB94-030513MS	C013-13M	MS	5030B	8260B	3
05-Mar-2013	24-BB94-030513MSD	C013-13S	MSD	5030B	8260B	3
05-Mar-2013	030513-ER-02	C013-14	ER	5030B	8260B	3
06-Mar-2013	030613-TB-02	C030-01	TB	5030B	8260B	3
06-Mar-2013	030613-TB-03	C032-01	TB	5030B	8260B	3
06-Mar-2013	030613-TB-04	C031-01	TB	5030B	8260B	3
06-Mar-2013	030613-TB-01	C029-02	TB	5030B	8260B	3
06-Mar-2013	21-IP10-030613	C030-02	N	5030B	8260B	4
06-Mar-2013	21-MW01-030613	C029-01	N	5030B	8260B	3
06-Mar-2013	21-MW07B-030613	C032-02R	N	5030B	8260B	4
06-Mar-2013	21-MW01B-030613	C029-03	N	5030B	8260B	3
06-Mar-2013	21-MW10B-030613	C032-03	N	5030B	8260B	3
06-Mar-2013	21-IP05-030613	C030-03	N	5030B	8260B	3
06-Mar-2013	21-MW12-030613	C029-04R	N	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Mar-2013	24-BB76-030613	C031-02	N	5030B	8260B	4
06-Mar-2013	21-IP12-030613	C030-04	N	5030B	8260B	3
06-Mar-2013	21-MW10A-030613	C032-04	N	5030B	8260B	3
06-Mar-2013	24-BB78-030613	C031-03	N	5030B	8260B	3
06-Mar-2013	24-BB78-030613MS	C031-03M	MS	5030B	8260B	3
06-Mar-2013	24-BB78-030613MSD	C031-03S	MSD	5030B	8260B	3
06-Mar-2013	21-MW08B-030613	C029-05R	N	5030B	8260B	4
06-Mar-2013	21-IP20-030613	C032-05	N	5030B	8260B	3
06-Mar-2013	21-MW08A-030613	C029-06R	N	5030B	8260B	3
06-Mar-2013	21-IP18-030613	C030-05	N	5030B	8260B	3
06-Mar-2013	24-TW-14-030613	C031-04	N	5030B	8260B	3
06-Mar-2013	21-IP30-030613	C032-06	N	5030B	8260B	3
06-Mar-2013	21-IP30-030613-D	C032-07	FD	5030B	8260B	3
06-Mar-2013	21-MW09A-030613	C030-06	N	5030B	8260B	3
06-Mar-2013	21-MW09A-030613-D	C030-07	FD	5030B	8260B	3
06-Mar-2013	21-IP07-030613	C029-07R	N	5030B	8260B	3
06-Mar-2013	21-IP07-030613	C029-07T	N	5030B	8260B	3
06-Mar-2013	24-TW-16-030613	C031-05	N	5030B	8260B	3
06-Mar-2013	21-IP37-030613	C032-08	N	5030B	8260B	3
06-Mar-2013	24-MW07C-030613	C031-06R	N	5030B	8260B	3
06-Mar-2013	030613-ER-03	C032-09	ER	5030B	8260B	3
06-Mar-2013	24-TW-46-030613	C030-08	N	5030B	8260B	3
06-Mar-2013	24-MW07B-030613	C031-07	N	5030B	8260B	3
07-Mar-2013	24-BB40-030713	C029-08R	N	5030B	8260B	4
07-Mar-2013	24-BB42-030713	C030-09	N	5030B	8260B	3
07-Mar-2013	24-TW-23-030713	C031-08	N	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Mar-2013	24-TW-23-030713MS	C031-08M	MS	5030B	8260B	3
07-Mar-2013	24-TW-23-030713MSD	C031-08S	MSD	5030B	8260B	3
07-Mar-2013	24-TW-03-030713	C032-10	N	5030B	8260B	3
07-Mar-2013	24-MW06A-030713	C029-09R	N	5030B	8260B	3
07-Mar-2013	24-IW11-030713	C031-09	N	5030B	8260B	3
07-Mar-2013	24-IW8-030713	C032-11	N	5030B	8260B	3
07-Mar-2013	24-TW-32-030713	C030-10	N	5030B	8260B	4
07-Mar-2013	24-MW06B-030713	C029-10R	N	5030B	8260B	3
07-Mar-2013	24-MW07A-030713	C031-10	N	5030B	8260B	3
07-Mar-2013	24-IW16-030713	C030-11	N	5030B	8260B	3
07-Mar-2013	24-EW8-030713	C032-12	N	5030B	8260B	4
07-Mar-2013	24-EW5-030713	C032-13	N	5030B	8260B	3
07-Mar-2013	24-MW10C-030713	C030-12	N	5030B	8260B	3
07-Mar-2013	24-BB63-030713	C029-11R	N	5030B	8260B	3
07-Mar-2013	24-IW6-030713	C031-11	N	5030B	8260B	3
07-Mar-2013	030713-ER-04	C031-12	ER	5030B	8260B	3
07-Mar-2013	24-MW04-030713	C031-13	N	5030B	8260B	4
07-Mar-2013	24-TW-38-030713	C029-12R	N	5030B	8260B	3
07-Mar-2013	24-MW3A-2-030713	C030-13	N	5030B	8260B	3
07-Mar-2013	24-MW2A-1-030713	C032-14	N	5030B	8260B	3
07-Mar-2013	24-MWS-030713	C030-14	N	5030B	8260B	3
07-Mar-2013	24-MW2B-1-030713	C032-15	N	5030B	8260B	3
07-Mar-2013	24-IW14-030713	C031-14	N	5030B	8260B	3
07-Mar-2013	24-EW6-030713	C032-16	N	5030B	8260B	3
07-Mar-2013	24-EW30-030713	C030-15	N	5030B	8260B	3
08-Mar-2013	030813-TB-03	C036-01	TB	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Mar-2013	24-TW-50-030813	C036-05	N	5030B	8260B	3
08-Mar-2013	24-TW-37-030813	C036-07	N	5030B	8260B	3
08-Mar-2013	24-TW-47-030813	C036-02	N	5030B	8260B	4
08-Mar-2013	24-TW-47-030813	C036-02T	N	5030B	8260B	4
08-Mar-2013	24-TW-34-030813	C036-08	N	5030B	8260B	3
08-Mar-2013	24-IW21-030813	C036-03R	N	5030B	8260B	3
08-Mar-2013	24-IW21-030813-D	C036-04R	FD	5030B	8260B	3
08-Mar-2013	24-TW-51-030813	C036-06	N	5030B	8260B	3
08-Mar-2013	030813-ER-02	C036-09	ER	5030B	8260B	3
11-Mar-2013	031113-TB-02	C051-01R	TB	5030B	8260B	3
11-Mar-2013	031113-TB-01	C052-09	TB	5030B	8260B	3
11-Mar-2013	24-TW-26-031113	C052-10	N	5030B	8260B	3
11-Mar-2013	24-TW-30-031113	C051-02	N	5030B	8260B	4
11-Mar-2013	24-TW-44-031113	C052-11	N	5030B	8260B	4
11-Mar-2013	24-EW34-031113	C051-03	N	5030B	8260B	3
11-Mar-2013	24-TW-36-031113	C052-12	N	5030B	8260B	3
11-Mar-2013	24-EW33-031113	C051-04	N	5030B	8260B	3
11-Mar-2013	24-TW-40-031113	C052-13	N	5030B	8260B	3
11-Mar-2013	24-EW-36-031113	C052-14	N	5030B	8260B	3
11-Mar-2013	24-TW-52-031113	C051-05	N	5030B	8260B	3
11-Mar-2013	24-TW-52-031113-D	C051-06	FD	5030B	8260B	3
11-Mar-2013	031113-ER-01	C052-15	ER	5030B	8260B	3
12-Mar-2013	24-EW12-031213	C051-07	N	5030B	8260B	3
12-Mar-2013	24-BB108-031213	C052-16	N	5030B	8260B	3
12-Mar-2013	24-BB108-031213-D	C052-17	FD	5030B	8260B	3
12-Mar-2013	24-EW18-031213	C052-18	N	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Mar-2013	24-BB37-031213	C051-08	N	5030B	8260B	3
12-Mar-2013	24-TW-41-031213	C052-01	N	5030B	8260B	4
12-Mar-2013	24-BB38-031213	C051-09	N	5030B	8260B	3
12-Mar-2013	24-EW4-031213	C052-02	N	5030B	8260B	3
12-Mar-2013	24-EW4-031213-D	C052-03	FD	5030B	8260B	3
12-Mar-2013	24-TW-49-031213	C051-10	N	5030B	8260B	3
12-Mar-2013	24-EW11-031213	C052-04	N	5030B	8260B	3
12-Mar-2013	24-EW11-031213	C052-04T	N	5030B	8260B	3
12-Mar-2013	24-TW-28-031213	C051-11	N	5030B	8260B	3
12-Mar-2013	24-TW-28-031213-D	C051-12	FD	5030B	8260B	3
12-Mar-2013	24-EW32-031213	C052-05	N	5030B	8260B	3
12-Mar-2013	24-EW32-031213-D	C052-06	FD	5030B	8260B	3
12-Mar-2013	24-TW-48-031213	C051-13	N	5030B	8260B	3
12-Mar-2013	24-TW-53-031213	C052-07	N	5030B	8260B	3
12-Mar-2013	24-TW-53-031213-D	C052-08	FD	5030B	8260B	3
12-Mar-2013	IR12-031213-05	C050-01	N	GEN PREP	353.3	3
12-Mar-2013	IR12-031213-05DUP	C050-01D	DUP	GEN PREP	353.3	3
12-Mar-2013	IR12-031213-05MS	C050-01M	MS	GEN PREP	353.3	3
12-Mar-2013	IR12-031213-05MSD	C050-01S	MSD	GEN PREP	353.3	3
12-Mar-2013	24-TW-11-031213	C051-14	N	5030B	8260B	4
12-Mar-2013	24-TW-11-031213	C051-14T	N	5030B	8260B	4
12-Mar-2013	031213-ER-02	C051-15	ER	5030B	8260B	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment II

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: **13C012**

Sample ID: **21-IP36-030413** ***Collected:*** **3/4/2013 4:45:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.36	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW04B-030413** ***Collected:*** **3/4/2013 5:20:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.25	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW07A2-030513** ***Collected:*** **3/5/2013 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.24	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW07A3-030513** ***Collected:*** **3/5/2013 11:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW07A3-030513-D** ***Collected:*** **3/5/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.24	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW11A-030513** ***Collected:*** **3/5/2013 9:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.22	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TETRACHLOROETHENE	0.33	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TRICHLOROETHENE	0.24	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C013**

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **21-IP03-030413** ***Collected:*** **3/4/2013 5:12:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.29	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-IP17-030513** ***Collected:*** **3/5/2013 10:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.43	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.30	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-IP19-030413** ***Collected:*** **3/4/2013 4:40:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.46	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-MW02B-030513** ***Collected:*** **3/5/2013 9:18:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.26	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.42	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C029**

Sample ID: **21-MW08A-030613** ***Collected:*** **3/6/2013 2:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.36	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-BB40-030713** ***Collected:*** **3/7/2013 8:47:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.21	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C030**

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **21-IP05-030613** ***Collected:*** **3/6/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.21	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-IP10-030613** ***Collected:*** **3/6/2013 9:10:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.35	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.42	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-BB42-030713** ***Collected:*** **3/7/2013 9:10:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.32	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-EW30-030713** ***Collected:*** **3/7/2013 5:05:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.20	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.34	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-IW16-030713** ***Collected:*** **3/7/2013 11:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.32	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MWS-030713** ***Collected:*** **3/7/2013 3:20:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.27	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-32-030713** ***Collected:*** **3/7/2013 10:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.37	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C031**

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **24-IW6-030713** ***Collected:*** **3/7/2013 1:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.35	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MW07A-030713** ***Collected:*** **3/7/2013 11:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.36	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MW07B-030613** ***Collected:*** **3/6/2013 5:45:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.42	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TRICHLOROETHENE	0.48	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.25	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MW07C-030613** ***Collected:*** **3/6/2013 5:15:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.21	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-14-030613** ***Collected:*** **3/6/2013 2:40:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.41	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TRICHLOROETHENE	0.29	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-23-030713** ***Collected:*** **3/7/2013 9:10:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.49	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C032**

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **21-IP20-030613** ***Collected:*** **3/6/2013 2:20:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.47	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **21-IP37-030613** ***Collected:*** **3/6/2013 4:35:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.37	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.39	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-EW5-030713** ***Collected:*** **3/7/2013 1:00:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.40	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-EW8-030713** ***Collected:*** **3/7/2013 11:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.25	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-IW8-030713** ***Collected:*** **3/7/2013 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.39	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MW2A-1-030713** ***Collected:*** **3/7/2013 2:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.26	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.37	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-MW2B-1-030713** ***Collected:*** **3/7/2013 3:25:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.40	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.28	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **24-MW2B-1-030713** ***Collected:*** **3/7/2013 3:25:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.45	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C036**

Sample ID: **24-IW21-030813** ***Collected:*** **3/8/2013 10:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-IW21-030813-D** ***Collected:*** **3/8/2013 10:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-34-030813** ***Collected:*** **3/8/2013 10:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.30	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-50-030813** ***Collected:*** **3/8/2013 9:15:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.41	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C051**

Sample ID: **24-EW12-031213** ***Collected:*** **3/12/2013 9:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.30	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.36	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **24-EW34-031113** ***Collected:*** **3/11/2013 4:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.41	J	0.20	MDL	0.50	PQL	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.39	J	0.20	MDL	0.50	PQL	UG/L	J	RI
VINYL CHLORIDE	0.35	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-28-031213** ***Collected:*** **3/12/2013 1:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.45	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-28-031213-D** ***Collected:*** **3/12/2013 2:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.45	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-30-031113** ***Collected:*** **3/11/2013 2:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.40	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-48-031213** ***Collected:*** **3/12/2013 3:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.22	J	0.20	MDL	0.50	PQL	UG/L	J	RI

SDG: **13C052**

Sample ID: **24-BB108-031213** ***Collected:*** **3/12/2013 9:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.22	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-BB108-031213-D** ***Collected:*** **3/12/2013 9:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **24-EW-36-031113** ***Collected:*** **3/11/2013 6:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-EW4-031213** ***Collected:*** **3/12/2013 11:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.36	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-EW4-031213-D** ***Collected:*** **3/12/2013 12:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.35	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-26-031113** ***Collected:*** **3/11/2013 2:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.32	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-36-031113** ***Collected:*** **3/11/2013 4:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.30	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-41-031213** ***Collected:*** **3/12/2013 11:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.23	J	0.20	MDL	0.50	PQL	UG/L	J	RI

Sample ID: **24-TW-44-031113** ***Collected:*** **3/11/2013 3:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.45	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **24-TW-53-031213-D** ***Collected:*** **3/12/2013 3:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
TETRACHLOROETHENE	0.20	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13C012', '13C013', '13C029', **Laboratory: 'EMXT'**

EDD Filename: 'Prep13C012', 'Prep13C013', 'Prep13C029', 'Prep13C030', 'Prep13C031', 'Prep13C032', 'Prep13C036', 'Prep13C051', 'Prep13C052' **eQAPP Name: Treasure Island 21 & 24**

Reason Code Legend

Reason Code	*Description*
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: -

Enclosure I

EPA Level III ADR Outliers
(including Manual Review Outliers)

Quality Control Outlier Reports

13C012

Reporting Limit Outliers

Lab Reporting Batch ID: 13C012 **Laboratory: EMXT**

EDD Filename: Prep13C012 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-IP36-030413	TRANS-1,2-DICHLOROETHENE	J	0.36	0.50	PQL	UG/L	J (all detects)
21-MW04B-030413	VINYL CHLORIDE	J	0.25	0.50	PQL	UG/L	J (all detects)
21-MW07A2-030513	TRANS-1,2-DICHLOROETHENE	J	0.24	0.50	PQL	UG/L	J (all detects)
21-MW07A3-030513	TRANS-1,2-DICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
21-MW07A3-030513-D	TRANS-1,2-DICHLOROETHENE	J	0.24	0.50	PQL	UG/L	J (all detects)
21-MW11A-030513	CIS-1,2-DICHLOROETHENE TETRACHLOROETHENE TRICHLOROETHENE	J J J	0.22 0.33 0.24	0.50 0.50 0.50	PQL PQL PQL	UG/L UG/L UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C012 **Laboratory: EMXT**

EDD Filename: Prep13C012 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-MW07A3-030513	21-MW07A3-030513-D			
CIS-1,2-DICHLOROETHENE	0.63	0.65	3	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.23	0.24	4	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456A1

SDG #: 13C012

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/4/13 - 3/5/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates		
XVII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1 1	030413-TB-03	11 1	2-BB96-030513	21 1	21-MW11A-030513MSD	31 1	MBLK1W
2 1	21-MW13-030413**	12 1	030413-TB-04	22		32 2	MBLK2W
3 1	21-IP36-030413	13 1	21-MW03B-030413**	23		33	
4 2	21-MW05-030413	14 2	21-MW03A-030413	24		34	
5 1	030413-SB-03	15 2	21-MW04B-030313	25		35	
6 1	21-MW04A-030513	16 1	21-MW11A-030513	26		36	
7 1	21-MW07A1-030513	17 2	21-MW11B-030513	27		37	
8 1	21-MW07A2-030513	18 1	2-BB96-030513MS	28		38	
9 1	21-MW07A3-030513	19 1	2-BB96-030513MSD	29		39	
10 1	21-MW07A3-030513-D	20 1	21-MW11A-030513MS	30		40	

Quality Control Outlier Reports

13C013

Reporting Limit Outliers

Lab Reporting Batch ID: 13C013 **Laboratory: EMXT**

EDD Filename: Prep13C013 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-IP03-030413	TRANS-1,2-DICHLOROETHENE	J	0.29	0.50	PQL	UG/L	J (all detects)
21-IP17-030513	TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.43 0.30	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
21-IP19-030413	VINYL CHLORIDE	J	0.46	0.50	PQL	UG/L	J (all detects)
21-MW02B-030513	TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.26 0.42	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C013 **Laboratory: EMXT**

EDD Filename: Prep13C013 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-MW02A-030513	21-MW02A-030513-D			
CIS-1,2-DICHLOROETHENE	99	100	1	30.00	No Qualifiers Applied
TETRACHLOROETHENE	1.4	1.5	7	30.00	
TRANS-1,2-DICHLOROETHENE	9.1	9.3	2	30.00	
TRICHLOROETHENE	1.4	1.4	0	30.00	
VINYL CHLORIDE	130	120	8	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456B1

SDG #: 13C013

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/4/13 - 3/5/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1 1	21-IP04-030413	11 2	21-MW09B-030413	21		31 1	MBLK1W
2 1	21-IP03-030413**	12 1	21-IP19-030413	22		32 2	MBLK2W
3 1	030413-ER-01	13 2	21-MW14-030513**	23		33	
4 1	030413-TB-01	14 2	21-IP17-030513	24		34	
5 1	21-MW02B-030513	15 1	24-BB94-030513	25		35	
6 1	21-MW02A-030513**	16 1	030513-ER-02	26		36	
7 2	21-MW02A-030513DL**	17 1	21-IP19-030413MS	27		37	
8 1	21-MW02A-030513-D	18 1	21-IP19-030413MSD	28		38	
9 2	21-MW02A-030513-DDL	19 1	24-BB94-030513MS	29		39	
10 1	030413-TB-02	20 1	24-BB94-030513MSD	30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29482B1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		C	exceeded calibration range	6	J det/A
		QQQ, C	↓	8	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		C	exceeded calibration range	6	X/A
		All except C	dilution	7	X/A
		QQQ, C	exceeded calibration range	8	X/A
		All except QQQ, C	dilution	9	X/A

Comments:

Quality Control Outlier Reports

13C029

Reporting Limit Outliers

Lab Reporting Batch ID: 13C029 **Laboratory: EMXT**

EDD Filename: Prep13C029 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-MW08A-030613	TRICHLOROETHENE	J	0.36	0.50	PQL	UG/L	J (all detects)
24-BB40-030713	VINYL CHLORIDE	J	0.21	0.50	PQL	UG/L	J (all detects)

LDC #: 29456C1

SDG #: 13C029

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	1	21-MW01-030613	11	2	24-MW06B-030713	21		31 1	MBLK1W
2	1	030613-TB-01	12	2	24-BB63-030713	22		32 2	MBLK2W
3	1	21-MW01B-030613	13	2	24-TW-38-030713	23		33	
4	2	21-MW12-030613	14			24		34	
5	2	21-MW08B-030613**	15			25		35	
6	2	21-MW08A-030613	16			26		36	
7	2	21-IP07-030613	17			27		37	
8	2	21-IP07-030613DL	18			28		38	
9	2	24-BB40-030713**	19			29		39	
10	2	24-MW06A-030713	20			30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456C9

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	7	J ut/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29456 C1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	7	X/A
		All except above	dilution	8	X/A

Comments:

Quality Control Outlier Reports

13C030

Reporting Limit Outliers

Lab Reporting Batch ID: 13C030

Laboratory: EMXT

EDD Filename: Prep13C030

eQAPP Name: Treasure Island 21 & 24

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-IP05-030613	TRANS-1,2-DICHLOROETHENE	J	0.21	0.50	PQL	UG/L	J (all detects)
21-IP10-030613	TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.35 0.42	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-BB42-030713	CIS-1,2-DICHLOROETHENE	J	0.32	0.50	PQL	UG/L	J (all detects)
24-EW30-030713	TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.20 0.34	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-IW16-030713	CIS-1,2-DICHLOROETHENE	J	0.32	0.50	PQL	UG/L	J (all detects)
24-MWS-030713	TRICHLOROETHENE	J	0.27	0.50	PQL	UG/L	J (all detects)
24-TW-32-030713	VINYL CHLORIDE	J	0.37	0.50	PQL	UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C030 **Laboratory: EMXT**

EDD Filename: Prep13C030 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-MW09A-030613	21-MW09A-030613-D			
CIS-1,2-DICHLOROETHENE	20	19	5	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	1.7	1.7	0	30.00	
TRICHLOROETHENE	3.0	3.2	6	30.00	
VINYL CHLORIDE	6.2	5.6	10	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456D1

SDG #: 13C030

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BK

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD≤30?
IV.	Continuing calibration/ICV	A	ICV/CCV≤25?
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	↓	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	↓	Not reviewed for ADR validation.
XIV.	System performance	↓	Not reviewed for ADR validation.
XV.	Overall assessment of data	↓	Not reviewed for ADR validation.
XVI.	Field duplicates	↓	
XVII.	Field blanks	↓	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	1	030613-TB-02	11	1	24-IW16-030713	21		31	1 MBLK1W
2	1	21-IP10-030613**	12	2	24-MW10C-030713	22		32	2 MBLK2W
3	1	21-IP05-030613	13	2	24-MW3A-2-030713	23		33	
4	1	21-IP12-030613	14	2	24-MWS-030713	24		34	
5	1	21-IP18-030613	15	2	24-EW30-030713	25		35	
6	1	21-MW09A-030613	16			26		36	
7	1	21-MW09A-030613-D	17			27		37	
8	1	24-TW-46-030613	18			28		38	
9	1	24-BB42-030713	19			29		39	
10	1	24-TW-32-030713**	20			30		40	

Quality Control Outlier Reports

13C031

Reporting Limit Outliers

Lab Reporting Batch ID: 13C031 **Laboratory: EMXT**

EDD Filename: Prep13C031 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
24-IW6-030713	CIS-1,2-DICHLOROETHENE	J	0.35	0.50	PQL	UG/L	J (all detects)
24-MW07A-030713	VINYL CHLORIDE	J	0.36	0.50	PQL	UG/L	J (all detects)
24-MW07B-030613	CIS-1,2-DICHLOROETHENE TRICHLOROETHENE VINYL CHLORIDE	J J J	0.42 0.48 0.25	0.50 0.50 0.50	PQL PQL PQL	UG/L UG/L UG/L	J (all detects)
24-MW07C-030613	CIS-1,2-DICHLOROETHENE	J	0.21	0.50	PQL	UG/L	J (all detects)
24-TW-14-030613	TRANS-1,2-DICHLOROETHENE TRICHLOROETHENE	J J	0.41 0.29	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-TW-23-030713	CIS-1,2-DICHLOROETHENE	J	0.49	0.50	PQL	UG/L	J (all detects)

LDC #: 29456E1
SDG #: 13C031
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 4/5/13
Page: 1 of 1
Reviewer: BK
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	↓	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	↓	Not reviewed for ADR validation.
XIV.	System performance	↓	Not reviewed for ADR validation.
XV.	Overall assessment of data	↓	Not reviewed for ADR validation.
XVI.	Field duplicates	↓	
XVII.	Field blanks	↓	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

water

1	1	030613-TB-04	11	1	24-IW6-030713	21		31	MBLK1W
2	1	24-BB76-030613**	12	1	030713-ER-04	22		32	MBLK2W
3	1	24-BB78-030613	13	1	24-MW04-030713**	23		33	
4	1	24-TW-14-030613	14	2	24-IW14-030713	24		34	
5	1	24-TW-16-030613	15	1	24-BB78-030613MS	25		35	
6	2	24-MW07C-030613	16	1	24-BB78-030613MSD	26		36	
7	1	24-MW07B-030613	17	1	24-TW-23-030713MS	27		37	
8	1	24-TW-23-030713	18	1	24-TW-23-030713MSD	28		38	
9	1	24-IW11-030713	19			29		39	
10	1	24-MW07A-030713	20			30		40	

Quality Control Outlier Reports

13C032

Reporting Limit Outliers

Lab Reporting Batch ID: 13C032 **Laboratory: EMXT**

EDD Filename: Prep13C032 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-IP20-030613	CIS-1,2-DICHLOROETHENE	J	0.47	0.50	PQL	UG/L	J (all detects)
21-IP37-030613	TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.37 0.39	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-EW5-030713	CIS-1,2-DICHLOROETHENE	J	0.40	0.50	PQL	UG/L	J (all detects)
24-EW8-030713	CIS-1,2-DICHLOROETHENE	J	0.25	0.50	PQL	UG/L	J (all detects)
24-IW8-030713	VINYL CHLORIDE	J	0.39	0.50	PQL	UG/L	J (all detects)
24-MW2A-1-030713	CIS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.26 0.37	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-MW2B-1-030713	CIS-1,2-DICHLOROETHENE TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J J	0.40 0.28 0.45	0.50 0.50 0.50	PQL PQL PQL	UG/L UG/L UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C032 **Laboratory: EMXT**

EDD Filename: Prep13C032 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-IP30-030613	21-IP30-030613-D			
TRANS-1,2-DICHLOROETHENE	0.62	0.63	2	30.00	No Qualifiers Applied
VINYL CHLORIDE	0.97	0.98	1	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456F1
SDG #: 13C032
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 4/5/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates		
XVII.	Field blanks		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1 1	030613-TB-03	11 1	24-IW8-030713	21		31 1	MBLK1W
2 2	21-MW07B-030613**	12 1	24-EW8-030713**	22		32 2	MBLK2W
3 1	21-MW10B-030613	13 1	24-EW5-030713	23		33	
4 1	21-MW10A-030613	14 1	24-MW2A-1-030713	24		34	
5 1	21-IP20-030613	15 1	24-MW2B-1-030713	25		35	
6 1	21-IP30-030613	16 1	24-EW6-030713	26		36	
7 1	21-IP30-030613-D	17		27		37	
8 1	21-IP37-030613	18		28		38	
9 1	030613-ER-03	19		29		39	
10 1	24-TW-03-030713	20		30		40	

Quality Control Outlier Reports

13C036

Reporting Limit Outliers

Lab Reporting Batch ID: 13C036 **Laboratory: EMXT**

EDD Filename: Prep13C036 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
24-IW21-030813	TRICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
24-IW21-030813-D	TRICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
24-TW-34-030813	CIS-1,2-DICHLOROETHENE	J	0.30	0.50	PQL	UG/L	J (all detects)
24-TW-50-030813	CIS-1,2-DICHLOROETHENE	J	0.41	0.50	PQL	UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C036 **Laboratory: EMXT**

EDD Filename: Prep13C036 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-IW21-030813	24-IW21-030813-D			
CIS-1,2-DICHLOROETHENE	1.2	1.2	0	30.00	No Qualifiers Applied
TRICHLOROETHENE	0.23	0.23	0	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456G1

SDG #: 13C036

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/8/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples	✓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	N	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	1	030813-TB-03	11		21		31	1	MB2K1W
2	1	24-TW-47-030813**	12		22		32	1	MB2K2W
3	2	24-TW-47-030813DL**	13		23		33		
4	2	24-IW21-030813	14		24		34		
5	2	24-IW21-030813-D	15		25		35		
6	1	24-TW-50-030813	16		26		36		
7	1	24-TW-51-030813	17		27		37		
8	1	24-TW-37-030813	18		28		38		
9	1	24-TW-34-030813	19		29		39		
10	1	030813-ER-02	20		30		40		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ, C	Exceeded calibration range	2	~~BR~~ / J det / A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 2945661

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	2	X/A
		All except above	dilution	3	X/A

Comments:

Quality Control Outlier Reports

13C051

Reporting Limit Outliers

Lab Reporting Batch ID: 13C051 **Laboratory: EMXT**

EDD Filename: Prep13C051 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
24-EW12-031213	CIS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.30 0.36	0.50 0.50	PQL PQL	UG/L UG/L	J (all detects)
24-EW34-031113	CIS-1,2-DICHLOROETHENE TRANS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J J	0.41 0.39 0.35	0.50 0.50 0.50	PQL PQL PQL	UG/L UG/L UG/L	J (all detects)
24-TW-28-031213	VINYL CHLORIDE	J	0.45	0.50	PQL	UG/L	J (all detects)
24-TW-28-031213-D	VINYL CHLORIDE	J	0.45	0.50	PQL	UG/L	J (all detects)
24-TW-30-031113	CIS-1,2-DICHLOROETHENE	J	0.40	0.50	PQL	UG/L	J (all detects)
24-TW-48-031213	TRICHLOROETHENE	J	0.22	0.50	PQL	UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C051 **Laboratory: EMXT**

EDD Filename: Prep13C051 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-52-031113	24-TW-52-031113-D			
CIS-1,2-DICHLOROETHENE	1.1	1.0	10	30.00	No Qualifiers Applied
VINYL CHLORIDE	0.74	0.67	10	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-28-031213	24-TW-28-031213-D			
CIS-1,2-DICHLOROETHENE	0.80	0.85	6	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.74	0.72	3	30.00	
VINYL CHLORIDE	0.45	0.45	0	30.00	

Project Name and Number: A083 - TREASURE ISLAND 21 & 24

LDC #: 29456H1

SDG #: 13C051

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/11/13 - 3/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1 3	031113-TB-02	11 2	24-TW-28-031213	21		31 1	MB2K1W
2 1	24-TW-30-031113**	12 2	24-TW-28-031213-D	22		32 2	MB2K2W
3 1	24-EW34-031113	13 2	24-TW-48-031213	23		33 3	MBLK3W
4 1	24-EW33-031113	14 2	24-TW-11-031213**	24		34	
5 1	24-TW-52-031113	15 3	24-TW-11-031213DL**	25		35	
6 1	24-TW-52-031113-D	16 1	031213-ER-02	26		36	
7 1	24-EW12-031213	17		27		37	
8 1	24-BB37-031213	18		28		38	
9 2	24-BB38-031213	19		29		39	
10 2	24-TW-49-031213	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456H

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ	exceeded calibration range	14	J det/A

Comments: See sample calculation verification worksheet for recalculations

COMQUA_BR.wpd

LDC #: 29450H

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ	exceeded calibration range	14	BR ~~J/UJ/A~~ X/A
		All except QQQ	dilution	15	X/A

Comments:

OVR_BR.wpd

Quality Control Outlier Reports

13C052

Reporting Limit Outliers

Lab Reporting Batch ID: 13C052 **Laboratory: EMXT**

EDD Filename: Prep13C052 **eQAPP Name: Treasure Island 21 & 24**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
24-BB108-031213	TRANS-1,2-DICHLOROETHENE	J	0.22	0.50	PQL	UG/L	J (all detects)
24-BB108-031213-D	TRANS-1,2-DICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
24-EW11-031213	TRANS-1,2-DICHLOROETHENE	J	11	25	PQL	UG/L	J (all detects)
24-EW-36-031113	TRANS-1,2-DICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
24-EW4-031213	TRICHLOROETHENE	J	0.36	0.50	PQL	UG/L	J (all detects)
24-EW4-031213-D	TRICHLOROETHENE	J	0.35	0.50	PQL	UG/L	J (all detects)
24-TW-26-031113	TRICHLOROETHENE	J	0.32	0.50	PQL	UG/L	J (all detects)
24-TW-36-031113	CIS-1,2-DICHLOROETHENE	J	0.30	0.50	PQL	UG/L	J (all detects)
24-TW-41-031213	TRANS-1,2-DICHLOROETHENE	J	0.23	0.50	PQL	UG/L	J (all detects)
24-TW-44-031113	TRANS-1,2-DICHLOROETHENE	J	0.45	0.50	PQL	UG/L	J (all detects)
24-TW-53-031213-D	TETRACHLOROETHENE	J	0.20	0.50	PQL	UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13C052 **Laboratory: EMXT**

EDD Filename: Prep13C052 **eQAPP Name: Treasure Island 21 & 24**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW4-031213	24-EW4-031213-D			
CIS-1,2-DICHLOROETHENE	3.1	3.1	0	30.00	No Qualifiers Applied
TRICHLOROETHENE	0.36	0.35	3	30.00	
VINYL CHLORIDE	0.52	0.50	4	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-53-031213	24-TW-53-031213-D			
CIS-1,2-DICHLOROETHENE	1.7	1.6	6	30.00	No Qualifiers Applied
TETRACHLOROETHENE	0.50 U	0.20	200	30.00	
TRICHLOROETHENE	0.69	0.66	4	30.00	
VINYL CHLORIDE	0.61	0.52	16	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-BB108-031213	24-BB108-031213-D			
CIS-1,2-DICHLOROETHENE	5.4	5.4	0	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.22	0.23	4	30.00	
TRICHLOROETHENE	1.8	1.9	5	30.00	
VINYL CHLORIDE	2.0	2.1	5	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW32-031213	24-EW32-031213-D			
CIS-1,2-DICHLOROETHENE	55	57	4	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.54	0.53	2	30.00	
TRICHLOROETHENE	2.7	2.7	0	30.00	
VINYL CHLORIDE	75	78	4	30.00	

LDC #: 29456I1

SDG #: 13C052

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR IV

Date: 4/8/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/11/13 - 3/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	BR ~~A~~ N	Not reviewed for ADR validation.
XIV.	System performance	BR ~~A~~ A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	2	24-TW-41-031213**	11	3	24-TW-26-031113	21		31 1	MBLK1W
2	2	24-EW4-031213	12	3	24-TW-44-031113**	22		32 2	MBLK2W
3	2	24-EW4-031213-D	13	3	24-TW-36-031113	23		33 3	MBLK3W
4	2	24-EW11-031213	14	3	24-TW-40-031113	24		34	
5	3	24-EW11-031213DL	15	3	24-EW-36-031113	25		35	
6	2	24-EW32-031213	16	1	031113-ER-01	26		36	
7	2	24-EW32-031213-D	17	3	24-BB108-031213	27		37	
8	2	24-TW-53-031213	18	3	24-BB108-031213-D	28		38	
9	2	24-TW-53-031213-D	19	3	24-EW18-031213	29		39	
10	1	031113-TB-01	20			30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456I1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	4	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29457I1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	4	X/A
		All except above	dilution	5	X/A

Comments:

OVR_BR.wpd

Enclosure II

EPA Level IV Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 4, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C012

Sample Identification

21-MW13-030413
21-MW03B-030413

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples 030413-TB-03 and 030413-TB-04 were identified as trip blanks. No volatile contaminants were found.

Sample 030413-ER-01 (from SDG 13C013) was identified as an equipment rinsate. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C012	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C012

SDG	Sample	Compound	Flag	A or P	Reason
13C012	21-MW13-030413 21-MW03B-030413	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C012

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C012

No Sample Data Qualified in this SDG

LDC #: 29456A1

SDG #: 13C012

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/4/13 ~~3/5/13~~ BR
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
VIII.	Laboratory control samples	A	Not ~~reviewed for ADR validation~~. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not ~~reviewed for ADR validation~~.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1, 12 ER = 030413-ER-01 BR ER = 032 (SDG #13C013)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	~~030413-TB-03~~	11	~~2-BB96-030513~~ 4	21	21-MW11A-030513MSD	31 1	MBLK1W
2 1	21-MW13-030413**	12	~~030413-TB-04~~	22		32 2	MBLK2W
3	~~21-IP36-030413~~	13 1	21-MW03B-030413**	23		33	
4	21-MW05-030413	14	~~21-MW03A-030413~~	24		34	
5	030413-SB-03	15	21-MW04B-030513 4	25		35	
6	21-MW04A-030513	16	21-MW11A-030513	26		36	
7	21-MW07A1-030513	17	21-MW11B-030513	27		37	
8	21-MW07A2-030513	18	2-BB96-030513MS	28		38	
9	21-MW07A3-030513	19	2-BB96-030513MSD	29		39	
10	~~21-MW07A3-030513~~-D	20	~~21-MW11A-030513~~MS	30		40	

LDC #: 29456A1

VALIDATION FINDINGS CHECKLIST

Reviewer: BA
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456A1

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/13/2013	Vinyl Chloride (IS1	0.374	0.374	0.375	0.375	10.25	10.30
	TO01		Tetrachloroethene (IS2	0.362	0.362	0.373	0.373	6.71	6.68

Cis/Cx	Ax	Ais
10/10	553855	1479001
10/10	454647	1256499

Conc	Vinyl Chloride	Tetrachloroethene
0.3		0.377
0.5	0.298	0.347
1	0.342	0.372
2	0.363	0.340
5	0.387	0.346
10	0.374	0.362
20	0.390	0.394
30	0.433	0.419
50	0.406	0.386
100	0.385	0.388
X =	0.375	0.373
S =	0.0387	0.0249

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCV082	3/6/2013	Vinyl Chloride (IS1)	0.375	0.401	0.401	6.9	6.9
			Tetrachloroethene (IS2	0.373	0.311	0.311	16.6	16.6

CCV1

Cis/Cx	Compound	Ax	Ais
10/10	Vinyl Chloride (IS1)	522315	1302251
10/10	Tetrachloroethene (IS2)	374717	1204126

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456A1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.52	105	105	0
1,2-Dichloroethane-d4	↓	10.28	103	103	0
Toluene-d8		9.67	96.7	96.7	0
Bromofluorobenzene		9.50	95.0	95.0	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456A1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 18|19

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene											
Trichloroethene	10.0	10.0	0	8.37	8.58	84	84	86	86	2	2.5
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W | LCSD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	8.61	9.28	86	86	93	93	7	7.5
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456A1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

C = 0.51 ug/L

Sample I.D. 13, C:

Conc. = $\frac{(25471)(10)(\quad)(\quad)}{(1330883)(0.375)(\quad)(\quad)}$

= 0.510358 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 4 through March 5, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C013

Sample Identification

21-IP03-030413
21-MW02A-030513
21-MW02A-030513DL
21-MW14-030513

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples 030413-TB-01 and 030413-TB-02 were identified as trip blanks. No volatile contaminants were found.

Samples 030413-ER-01 and 030513-ER-02 were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
21-MW02A-030513	Vinyl chloride	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C013	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
21-MW02A-030513	Vinyl chloride	X	A
21-MW02A-030513DL	All TCL compounds except Vinyl chloride	X	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples 21-MW02A-030513 and 21-MW02A-030513-D and samples 21-MW02A-030513DL and 21-MW02A-030513-DDL were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	21-MW02A-030513	21-MW02A-030513-D	
cis-1,2-Dichloroethene	99	100	1 (≤30)
Tetrachloroethene	1.4	1.5	7 (≤30)
trans-1,2-Dichloroethene	9.1	9.3	2 (≤30)
Trichloroethene	1.4	1.4	0 (≤30)
Vinyl chloride	110	120	9 (≤30)

Compound	Concentration (ug/L)		RPD
	21-MW02A-030513DL	21-MW02A-030513-DDL	
cis-1,2-Dichloroethene	100	100	0 (≤30)
trans-1,2-Dichloroethene	9.9	9.7	2 (≤30)

Compound	Concentration (ug/L)		RPD
	21-MW02A-030513DL	21-MW02A-030513-DDL	
Vinyl chloride	130	120	8 (≤30)

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C013

SDG	Sample	Compound	Flag	A or P	Reason
13C013	21-MW02A-030513	Vinyl chloride	J (all detects)	A	Compound quantitation (exceeded range)
13C013	21-IP03-030413 21-MW02A-030513 21-MW02A-030513DL 21-MW14-030513	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13C013	21-MW02A-030513	Vinyl chloride	X	A	Overall assessment of data
13C013	21-MW02A-030513DL	All TCL compounds except Vinyl chloride	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C013

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C013

No Sample Data Qualified in this SDG

LDC #: 29456B1

SDG #: 13C013

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BK

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/4/13 - 3/5/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	~~Not reviewed for ADR validation.~~
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	~~Not reviewed for ADR validation.~~
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	~~Not reviewed for ADR validation.~~
XVI.	Field duplicates	SW	FD = 6 + 8, 7 + 9
XVII.	Field blanks	ND	ER = 3, 16 TB = 4, 10

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

water

1	~~21-IP04-030413~~	11	~~21-MW09B-030413~~	21		31 1	MBLK1W
2 1	21-IP03-030413**	12	~~21-IP19-030413~~	22		32 2	MBLK2W
3	~~030413-ER-01~~	13 2	21-MW14-030513**	23		33	
4	030413-TB-01	14	~~21-IP17-030513~~	24		34	
5	~~21-MW02B-030513~~	15	24-BB94-030513	25		35	
6 1	21-MW02A-030513**	16	030513-ER-02	26		36	
7 2	21-MW02A-030513DL**	17	21-IP19-030413MS	27		37	
8	~~21-MW02A-030513-D~~	18	21-IP19-030413MSD	28		38	
9	21-MW02A-030513-DDL	19	24-BB94-030513MS	29		39	
10	~~030413-TB-02~~	20	~~24-BB94-030513MSD~~	30		40	

LDC #: 29456B1

VALIDATION FINDINGS CHECKLIST

Reviewer: BA
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456B1

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456 K1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		C	exceeded calibration range	6	J det / A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		C	exceeded calibration range	6	X / A
		All except C	dilution	7	X / A

Comments:

LDC#: 29456B1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC MS Volatiles (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)
	6	8	
QQQ	99	100	1
AA	1.4	1.5	7
PPP	9.1	9.3	2
S	1.4	1.4	0
C	110	120	9

Compound	Concentration (ug/L)		RPD (≤30%)
	7	9	
QQQ	100	100	0
PPP	9.9	9.7	2
C	130	120	8

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LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/5/2013	Vinyl Chloride (IS1	0.583	0.583	0.515	0.515	9.32	9.32
	TO67		Tetrachloroethene (IS2	0.451	0.451	0.448	0.448	10.01	9.98

Cis/Cx	Ax	Ais
10/10	802200	1376695
10/10	443581	984355

Conc	Vinyl Chloride	Tetrachloroethene
0.3	0.508	0.534
0.5	0.498	0.457
1	0.582	0.454
2	0.556	0.398
5	0.505	0.373
10	0.583	0.451
20	0.466	0.423
30	0.484	0.464
50	0.453	0.485
100		0.439
X =	0.515	0.448
S =	0.0480	0.0447

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCC064	3/6/2013	Vinyl Chloride (IS1)	0.515	0.575	0.575	11.7	11.7
			Tetrachloroethene (IS2	0.448	0.459	0.459	2.5	2.5
2	RCC088	3/7/2013	Vinyl Chloride (IS1)	0.515	0.499	0.499	3.1	3.0
			Tetrachloroethene (IS2	0.448	0.438	0.438	2.2	2.1

		CCV1		CCV2	
Cis/Cx	Compound	Ax	Ais	Ax	Ais
10/10	Vinyl Chloride (IS1)	743974	1293536	697547	1396851
10/10	Tetrachloroethene (IS2)	437726	953710	437205	997183

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.12	101	101	0
1,2-Dichloroethane-d4	↓	9.85	98.5	98.5	0
Toluene-d8		9.90	99.0	99.0	0
Bromofluorobenzene		9.33	93.3	93.3	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 17|18

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene											
Trichloroethene	10.0	10.0	U	10.0	9.48	100	100	95	95	6	5.3
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: <

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS 2W / LCD2W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.59	9.36	96	96	94	94	2	2
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456B1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

S = 1.4 ug/L

Sample I.D. 6, 5:

Conc. = (83235)(10)( )( )
(~~1141245~~ 0.386)( )( )
= 1563840
1.37888 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 6 through March 7, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C029

Sample Identification

21-MW08B-030613
24-BB40-030713

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 030613-TB-01 was identified as a trip blank. No volatile contaminants were found.

Samples 030613-ER-03 (from SDG 13C032) and 030713-ER-04 (from SDG 13C031) were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C029	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C029

SDG	Sample	Compound	Flag	A or P	Reason
13C029	21-MW08B-030613 24-BB40-030713	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C029

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C029

No Sample Data Qualified in this SDG

LDC #: 29456C1
SDG #: 13C029
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	~~Not reviewed for ADR validation.~~
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	~~Not reviewed for ADR validation.~~
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = ~~12~~ 10 ER = 030613-ER-03 (SDG# 13C032) ER = 030713-ER-04 (SDG# 13C031)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~21-MW01-030613~~	11	~~24-MW06B-030713~~	21		31 1	MBLK1W
2	030613-TB-01	12	24-BB63-030713	22		32 2	MBLK2W
3	21-MW01B-030613	13	~~24-TW-38-030713~~	23		33	
4	~~21-MW12-030613~~	14		24		34	
5 2	21-MW08B-030613**	15		25		35	
6	~~21-MW08A-030613~~	16		26		36	
7	21-IP07-030613	17		27		37	
8	~~21-IP07-030613DL~~	18		28		38	
9 2	24-BB40-030713**	19		29		39	
10	~~24-MW06A-030713~~	20		30		40	

LDC #: 29456C1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456C1

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456C1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/28/2013	Vinyl Chloride (IS1	0.506	0.506	0.453	0.454	13.16	13.17
	TO94		Tetrachloroethene (IS2	0.345	0.345	0.333	0.333	8.27	8.22

Cis/Cx	Ax	Ais
10/10	1041705	2059959
10/10	561469	1625851

Conc	Vinyl Chloride	Tetrachloroethene
0.3		0.292
0.5	0.324	0.299
1	0.424	0.306
2	0.379	0.325
5	0.465	0.325
10	0.506	0.345
20	0.489	0.359
30	0.478	0.332
40	0.497	0.345
50	0.479	0.354
100	0.494	0.382
X =	0.454	0.333
S =	0.0597	0.0274

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456C1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCD071	3/11/2013	Vinyl Chloride (IS1)	0.453	0.433	0.433	4.4	4.3
			Tetrachloroethene (IS2	0.333	0.328	0.328	1.5	1.5

CCV1

Cis/Cx	Compound	Ax	Ais
10/10	Vinyl Chloride (IS1)	867897	2002797
10/10	Tetrachloroethene (IS2)	533235	1625031

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456C1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 5

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.16	102	102	0
1,2-Dichloroethane-d4	↓	9.69	96.9	96.9	0
Toluene-d8	↓	10.02	100	100	0
Bromofluorobenzene	↓	10.35	103	103.5	0.5

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456C1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS2W / LCD2W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.35	9.51	93	93.5	95	95	2	2
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456C1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example: C = 0.21 ug/L

Sample I.D. 9, C:

Conc. = $\frac{(20888)(10)(\quad)}{(2187186)(0.453)(\quad)}$

= 0.2108205 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 6 through March 7, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C030

Sample Identification

21-IP10-030613
24-TW-32-030713

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 030613-TB-02 was identified as a trip blank. No volatile contaminants were found.

Samples 030613-ER-03 (from SDG 13C032) and 030713-ER-04 (from SDG 13C031) were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C030	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C030

SDG	Sample	Compound	Flag	A or P	Reason
13C030	21-IP10-030613 24-TW-32-030713	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C030

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C030

No Sample Data Qualified in this SDG

LDC #: 29456D1

SDG #: 13C030

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: OK

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD≤30?
IV.	Continuing calibration/ICV	D	ICV/CCV ≤25?
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	N	~~FB~~ on
XVII.	Field blanks	ND	TB = 1 ER = 030613-ER-03 (SDG# 13C072) ER = 030713-ER-04 (SDG# 13C031) CSR

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~030613-TB-02~~	11	~~24-IW16-030713~~	21		31 1	MBLKHW
2 1	21-IP10-030613**	12	24-MW10C-030713	22		32 2	MBLK2W
3	~~21-IP05-030613~~	13	24-MW3A-2-030713	23		33	
4	21-IP12-030613	14	24-MWS-030713	24		34	
5	21-IP18-030613	15	24-EW30-030713	25		35	
6	21-MW09A-030613	16		26		36	
7	21-MW09A-030613-D	17		27		37	
8	24-TW-46-030613	18		28		38	
9	~~24-BB42-030713~~	19		29		39	
10 1	24-TW-32-030713**	20		30		40	

LDC #: 29456D1

VALIDATION FINDINGS CHECKLIST

Reviewer: BA
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456D1

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456D1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: R

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/13/2013	Vinyl Chloride (IS1)	0.374	0.374	0.375	0.375	10.25	10.30
	TO01		Tetrachloroethene (IS2)	0.362	0.362	0.373	0.373	6.71	6.68

Cis/Cx	Ax	Ais
10/10	553855	1479001
10/10	454647	1256499

Conc	Vinyl Chloride	Tetrachloroethene
0.3		0.377
0.5	0.298	0.347
1	0.342	0.372
2	0.363	0.340
5	0.387	0.346
10	0.374	0.362
20	0.390	0.394
30	0.433	0.419
50	0.406	0.386
100	0.385	0.388
X =	0.375	0.373
S =	0.0387	0.0249

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456D1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCV133	3/8/2013	Vinyl Chloride (IS1)	0.375	0.428	0.428	14.1	14.0
			Tetrachloroethene (IS2	0.373	0.365	0.365	2.1	2.2

CCV1

Cis/Cx	Compound	Ax	Ais
10/10	Vinyl Chloride (IS1)	542143	1267937
10/10	Tetrachloroethene (IS2)	403312	1106456

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456D1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.22	102	102	0
1,2-Dichloroethane-d4	↓	9.79	97.9	97.9	0
Toluene-d8	↓	9.80	98.0	98.0	0
Bromofluorobenzene	↓	10.39	104	104	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456D1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W / LCSD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.87	9.65	99	99	96	96.5	2	2
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 2945601

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example: C = 0.42 ug/L

Sample I.D. 2, C:

Conc. = $\frac{(21388)(10)(\quad)(\quad)}{(135392)(0.375)(\quad)(\quad)}$

= 0.4196798 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 6 through March 7, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C031

Sample Identification

24-BB76-030613
24-MW04-030713

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 030613-TB-04 was identified as a trip blank. No volatile contaminants were found.

Samples 030613-ER-03 (from SDG 13C032) and 030713-ER-04 were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C031	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C031

SDG	Sample	Compound	Flag	A or P	Reason
13C031	24-BB76-030613 24-MW04-030713	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C031

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C031

No Sample Data Qualified in this SDG

LDC #: 29456E1

SDG #: 13C031

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation.
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB= 1 ~~EB~~ ER= 12 13C032 ER= ~~K~~ BR 030613-ER(SDG# BR)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~030613-TB-04~~	11	~~24-IW6-030713~~	21		31 1	MB2K1W
2 1	24-BB76-030613**	12	~~030713-ER-04~~	22		32 2	MB2K2W
3	~~24-BB78-030613~~	13 1	24-MW04-030713**	23		33	
4	24-TW-14-030613	14	~~24-IW14-030713~~	24		34	
5	24-TW-16-030613	15	24-BB78-030613MS	25		35	
6	24-MW07C-030613	16	24-BB78-030613MSD	26		36	
7	24-MW07B-030613	17	24-TW-23-030713MS	27		37	
8	24-TW-23-030713	18	24-~~TW-23-030713~~MSD	28		38	
9	24-IW11-030713	19		29		39	
10	24-MW07A-030713	20		30		40	

LDC #: 29456E1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456E1

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456E1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/5/2013	Vinyl Chloride (IS1	0.583	0.583	0.515	0.515	9.32	9.32
	TO67		Tetrachloroethene (IS2	0.451	0.451	0.448	0.448	10.01	9.98

Cis/Cx	Ax	Ais
10/10	802200	1376695
10/10	443581	984355

Conc	Vinyl Chloride	Tetrachloroethene
0.3	0.508	0.534
0.5	0.498	0.457
1	0.582	0.454
2	0.556	0.398
5	0.505	0.373
10	0.583	0.451
20	0.466	0.423
30	0.484	0.464
50	0.453	0.485
100		0.439
X =	0.515	0.448
S =	0.0480	0.0447

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456E1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCC111	3/8/2013	Vinyl Chloride (IS1)	0.515	0.479	0.479	7.0	7.1
			Tetrachloroethene (IS2	0.448	0.481	0.481	7.4	7.3

CCV1

Cis/Cx	Compound	Ax	Ais
10/10	Vinyl Chloride (IS1)	607225	1268593
10/10	Tetrachloroethene (IS2)	436318	907699

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456E1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	9.68	96.8	96.8	0
1,2-Dichloroethane-d4	↓	8.28	82.8	82.8	0
Toluene-d8		9.71	97.1	97.1	0
Bromofluorobenzene		8.66	86.6	86.6	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456E1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 15|16

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene											
Trichloroethene	10.0	10.0	0	9.72	9.96	97	97	100	100	2	2.4
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456E1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: R

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W | LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	10.8	10.2	108	108	102	102	5	5.7
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456E1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 2, C:

C = 1.6 ug/L

Conc. = $\frac{(117937)(10)(\quad)}{(1409155)(0.515)(\quad)}$

= 1.625115 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 6 through March 7, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C032

Sample Identification

21-MW07B-030613
24-EW8-030713

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 030613-TB-03 was identified as a trip blank. No volatile contaminants were found.

Samples 030613-ER-03 and 030713-ER-04 (from SDG 13C031) were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C032	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C032

SDG	Sample	Compound	Flag	A or P	Reason
13C032	21-MW07B-030613 24-EW8-030713	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C032

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C032

No Sample Data Qualified in this SDG

LDC #: 29456F1

SDG #: 13C032

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/6/13 - 3/7/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30?
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25?
V.	Blanks	A	Not ~~reviewed for ADR validation~~.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client Spec.
VIII.	Laboratory control samples	A	Not ~~reviewed for ADR validation~~. LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not ~~reviewed for ADR validation~~.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not ~~reviewed for ADR validation.~~
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1 ER = 9

ER = 030713-ER-04 (SDG # 13C031)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~030613-TB-03~~	11	~~24-IW8-030713~~	21		31 1	MBLK1W
2 2	21-MW07B-030613**	12 1	24-EW8-030713**	22		32 2	MBLK2W
3	~~21-MW10B-030613~~	13	~~24-EW5-030713~~	23		33	
4	21-MW10A-030613	14	24-MW2A-1-030713	24		34	
5	21-IP20-030613	15	24-MW2B-1-030713	25		35	
6	21-IP30-030613	16	~~24-EW6-030713~~	26		36	
7	21-IP30-030613-D	17		27		37	
8	21-IP37-030613	18		28		38	
9	030613-ER-03	19		29		39	
10	~~24-TW-03-030713~~	20		30		40	

LDC #: 29456F1

VALIDATION FINDINGS CHECKLIST

Reviewer: BA
2nd Reviewer: P

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456F1

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456F1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	2/28/2013	Vinyl Chloride (IS1	0.326	0.326	0.317	0.317	12.76	12.77
	TO06		Tetrachloroethene (IS2	0.405	0.405	0.385	0.385	8.92	8.95

Cis/Cx	Ax	Ais
10/10	715143	2191661
10/10	750513	1853242

Conc	Vinyl Chloride	Tetrachloroethene
0.3		0.394
0.5	0.279	0.458
1	0.337	0.392
2	0.371	0.388
5	0.326	0.363
10	0.326	0.405
20	0.260	0.381
30		0.389
50		0.344
100		0.334
X =	0.317	0.385
S =	0.0404	0.0344

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456F1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: ←

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCW033	3/8/2013	Vinyl Chloride (IS1)	0.317	0.283	0.283	10.7	10.8
			Tetrachloroethene (IS2)	0.385	0.326	0.326	15.3	15.2
2	RCW060	3/12/2013	Vinyl Chloride (IS1)	0.317	0.288	0.288	9.1	9.2
			Tetrachloroethene (IS2)	0.385	0.366	0.366	4.9	4.8

		CCV1		CCV2	
Cis/Cx	Compound	Ax	Ais	Ax	Ais
10/10	Vinyl Chloride (IS1)	690065	2440888	636194	2210819
10/10	Tetrachloroethene (IS2)	684397	2098583	680046	1855672

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456 F1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.46	105	105	0
1,2-Dichloroethane-d4	↓	9.94	99.4	99.4	0
Toluene-d8		10.12	101	101	0
Bromofluorobenzene		9.84	98.4	98.4	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456F1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W/LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.68	9.22	97	97	92	92	5	4.9
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456F1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 12, C:

C = 1.1 ug/L

Conc. = (93409)(10)( )( ) / (265243)(0.317)( )( )

= 1.110943 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 8, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C036

Sample Identification

24-TW-47-030813
24-TW-47-030813DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 030813-TB-03 was identified as a trip blank. No volatile contaminants were found.

Sample 030813-ER-02 was identified as an equipment rinsate. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
24-TW-47-030813	cis-1,2-Dichloroethene Vinyl chloride	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C036	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
24-TW-47-030813	cis-1,2-Dichloroethene Vinyl chloride	X X	A
24-TW-47-030813DL	All TCL compounds except cis-1,2-Dichloroethene Vinyl chloride	X	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C036

SDG	Sample	Compound	Flag	A or P	Reason
13C036	24-TW-47-030813	cis-1,2-Dichloroethene Vinyl chloride	J (all detects) J (all detects)	A	Compound quantitation (exceeded range)
13C036	24-TW-47-030813 24-TW-47-030813DL	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13C036	24-TW-47-030813	cis-1,2-Dichloroethene Vinyl chloride	X X	A	Overall assessment of data
13C036	24-TW-47-030813DL	All TCL compounds except cis-1,2-Dichloroethene Vinyl chloride	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C036

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C036

No Sample Data Qualified in this SDG

LDC #: 29456G1

SDG #: 13C036

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/8/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1 ER = 10

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

~~1~~	~~030813-TB-03~~	11		21		~~31~~ 1	MB2K1W
2 1	24-TW-47-030813**	12		22		~~32~~ 2	MB2K2W
3 2	24-TW-47-030813DL**	13		23		33	
4	~~24-IW21-030813~~	14		24		34	
5	24-IW21-030813-D	15		25		35	
6	24-TW-50-030813	16		26		36	
7	24-TW-51-030813	17		27		37	
8	24-TW-37-030813	18		28		38	
9	24-TW-34-030813	19		29		39	
~~10~~	~~030813-ER-02~~	20		30		40	

LDC #: 2945661

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 2945661

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	2	dilut/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 2945661

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	2	x/A
		All except above	dilution	3	x/A

Comments:

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/5/2013	Vinyl Chloride (IS1	0.583	0.583	0.515	0.515	9.32	9.32
	TO67		Tetrachloroethene (IS2	0.451	0.451	0.448	0.448	10.01	9.98

Cis/Cx	Ax	Ais
10/10	802200	1376695
10/10	443581	984355

Conc	Vinyl Chloride	Tetrachloroethene
0.3	0.508	0.534
0.5	0.498	0.457
1	0.582	0.454
2	0.556	0.398
5	0.505	0.373
10	0.583	0.451
20	0.466	0.423
30	0.484	0.464
50	0.453	0.485
100		0.439
X =	0.515	0.448
S =	0.0480	0.0447

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456G1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCC137	3/11/2013	Vinyl Chloride (IS1)	0.515	0.563	0.563	9.3	9.3
			Tetrachloroethene (IS2	0.448	0.449	0.449	0.2	0.3
2	RCC160	3/12/2013	Vinyl Chloride (IS1)	0.515	0.540	0.540	4.9	4.8
			Tetrachloroethene (IS2	0.448	0.461	0.461	2.9	3.0

		CCV1		CCV2	
Cis/Cx	Compound	Ax	Ais	Ax	Ais
10/10	Vinyl Chloride (IS1)	708847	1258718	611396	1132522
10/10	Tetrachloroethene (IS2)	408631	909125	377274	817939

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	9.97	99.7	99.7	0
1,2-Dichloroethane-d4	↓	8.41	84.1	84.1	0
Toluene-d8		9.60	96.0	96.0	0
Bromofluorobenzene		8.91	89.1	89.1	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W/LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	10.3	9.83	103	103	98	98	5	4.7
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456G1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

C = 460 ug/L

Sample I.D. 3, C:

Conc. = (1165277)(10)(25) / (1241645)(0.515)( )( )

= 455.57985 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 11 through March 12, 2013
LDC Report Date:	April 16, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C051

Sample Identification

24-TW-30-031113
24-TW-11-031213
24-TW-11-031213DL

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 031113-TB-02 was identified as a trip blank. No volatile contaminants were found.

Samples 031113-ER-01 (from SDG 13C052) and 031213-ER-02 were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
24-TW-11-031213	cis-1,2-Dichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C051	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
24-TW-11-031213	cis-1,2-Dichloroethene	X	A
24-TW-11-031213DL	All TCL compounds except cis-1,2-Dichloroethene	X	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C051

SDG	Sample	Compound	Flag	A or P	Reason
13C051	24-TW-11-031213	cis-1,2-Dichloroethene	J (all detects)	A	Compound quantitation (exceeded range)
13C051	24-TW-30-031113 24-TW-11-031213 24-TW-11-031213DL	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13C051	24-TW-11-031213	cis-1,2-Dichloroethene	X	A	Overall assessment of data
13C051	24-TW-11-031213DL	All TCL compounds except cis-1,2-Dichloroethene	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C051

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C051

No Sample Data Qualified in this SDG

LDC #: 29456H1

SDG #: 13C051

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 4/5/13

Page: 1 of 1

Reviewer: BK

2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/11/13 - 3/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 1 ER = 14

ER = 031113-ER-01 (SDG # 13C052)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~031113-TB-02~~	11	~~24-TW-28-031213~~	21		31 1	MBLK1W
2 1	24-TW-30-031113**	12	24-TW-28-031213-D	22		32 2	MBLK2W
3	24-EW34-031113	13	~~24-TW-48-031213~~	23		33 3	MBLK3W
4	24-EW33-031113	14 2	24-TW-11-031213**	24		34	
5	24-TW-52-031113	15 3	24-TW-11-031213DL**	25		35	
6	24-TW-52-031113-D	16	031213-ER-02	26		36	
7	24-EW12-031213	17		27		37	
8	24-BB37-031213	18		28		38	
9	24-BB38-031213	19		29		39	
10	24-~~TW-49-03~~1213	20		30		40	

LDC #: 29456H1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456H1

VALIDATION FINDINGS CHECKLIST

Reviewer: KR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓ KR	✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456H1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Q N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Q N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ	exceeded calibration range	14	J/UJ/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29456H

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ	exceeded calibration range	14	X/A
		All except QQQ	dilution	15	X/A

Comments:

LDC #: 29456H1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	3/12/2013	Vinyl Chloride (IS1	0.271	0.271	0.287	0.287	5.39	5.37
	TO003		Tetrachloroethene (IS2	0.355	0.355	0.379	0.379	6.42	6.41

Cis/Cx	Ax	Ais
10/10	580599	2143847
10/10	680314	1917204

Conc	Vinyl Chloride	Tetrachloroethene
0.3	0.295	0.438
0.5	0.288	0.389
1	0.315	0.368
2	0.308	0.385
5	0.286	0.382
10	0.271	0.355
20	0.286	0.371
30	0.277	0.366
50	0.270	0.383
100	0.273	0.352
X =	0.287	0.379
S =	0.0154	0.0243

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456H1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCB034	3/13/2013 7:32	Vinyl Chloride (IS1)	0.287	0.285	0.285	0.7	0.7
			Tetrachloroethene (IS2)	0.379	0.362	0.362	4.5	4.4
2	RCB052	3/13/2013 19:38	Vinyl Chloride (IS1)	0.287	0.253	0.253	11.8	11.7
			Tetrachloroethene (IS2)	0.379	-0.405	0.405	6.9	6.8
3	RCB073	3/14/2013	Vinyl Chloride (IS1)	0.287	0.256	0.256	10.8	10.8
			Tetrachloroethene (IS2)	0.379	0.342	0.342	9.8	9.8

		CCV1		CCV2		CCV3	
Cis/Cx	Compound	Ax	Ais	Ax	Ais	Ax	Ais
10/10	Vinyl Chloride (IS1)	947514	3328345	726082	2865560	768407	3003309
10/10	Tetrachloroethene (IS2)	1055633	2913416	938536	2318797	930567	2722615

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456H1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	9.98	99.8	99.8	0
1,2-Dichloroethane-d4	↓	10.89	109	109	0
Toluene-d8		10.08	101	101	0
Bromofluorobenzene		10.61	106	106	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456H1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W / LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.80	9.43	98	98	94	94	4	3.8
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456H1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example: C = 52 ug/L

Sample I.D. 14, C:

Conc. = $\frac{(4488778)(10)(\quad)}{(3024940)(0.287)(\quad)}$

= 51.704634 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	March 11 through March 12, 2013
LDC Report Date:	April 9, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13C052

Sample Identification

24-TW-41-031213
24-TW-44-031113

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 031113-TB-01 was identified as a trip blank. No volatile contaminants were found.

Samples 031113-ER-01 and 031213-ER-02 (from SDG 13C051) were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13C052	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13C052

SDG	Sample	Compound	Flag	A or P	Reason
13C052	24-TW-41-031213 24-TW-44-031113	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13C052

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13C052

No Sample Data Qualified in this SDG

LDC #: 29456I1

SDG #: 13C052

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR (IV)

Date: 4/8/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/11/13 - 3/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|CV| CCV ≤ 25%
V.	Blanks	A	~~Not reviewed for ADR validation.~~
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS/P
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	~~Not reviewed for ADR validation.~~
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 10 ER = 16

ER = 031213-ER-02 (SDG # 13C051)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1 2	24-TW-41-031213**	11	~~24-TW-26-031113~~	21		31 1	MBLK1W
2	~~24-EW4-031213~~	12 3	24-TW-44-031113**	22		32 2	MBLK2W
3	24-EW4-031213-D	13	~~24-TW-36-031113~~	23		33 3	MBLK3W
4	24-EW11-031213	14	24-TW-40-031113	24		34	
5	24-EW11-031213DL	15	24-EW-36-031113	25		35	
6	24-EW32-031213	16	031113-ER-01	26		36	
7	24-EW32-031213-D	17	24-BB108-031213	27		37	
8	24-TW-53-031213	18	24-BB108-031213-D	28		38	
9	24-TW-53-031213-D	19	~~24-EW18-031213~~	29		39	
10	~~031113-TB-01~~	20		30		40	

LDC #: 29456I1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 29456I1

VALIDATION FINDINGS CHECKLIST

Reviewer: KK
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29456I1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL TO003	3/12/2013	Vinyl Chloride (IS1	0.271	0.271	0.287	0.287	5.39	5.37
			Tetrachloroethene (IS2	0.355	0.355	0.379	0.379	6.42	6.41

Cis/Cx	Ax	Ais
10/10	580599	2143847
10/10	680314	1917204

Conc	Vinyl Chloride	Tetrachloroethene
0.3	0.295	0.438
0.5	0.288	0.389
1	0.315	0.368
2	0.308	0.385
5	0.286	0.382
10	0.271	0.355
20	0.286	0.371
30	0.277	0.366
50	0.270	0.383
100	0.273	0.352
X =	0.287	0.379
S =	0.0154	0.0243

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 29456I1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RCB052	3/13/2013	Vinyl Chloride (IS1)	0.287	0.253	0.253	11.8	11.8
			Tetrachloroethene (IS2	0.379	0.405	0.405	6.9	6.8
2	RCB073	3/14/2013	Vinyl Chloride (IS1)	0.287	0.256	0.256	10.8	10.8
			Tetrachloroethene (IS2	0.379	0.342	0.342	9.8	9.8

		CCV1		CCV2	
Cis/Cx	Compound	Ax	Ais	Ax	Ais
10/10	Vinyl Chloride (IS1)	726082	2865560	768407	3003309
10/10	Tetrachloroethene (IS2)	938536	2318797	930567	2722615

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29452I1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	9.82	98.2	98.2	0
1,2-Dichloroethane-d4	↓	11.02	110	110	0
Toluene-d8		9.74	97.4	97.4	0
Bromofluorobenzene		10.16	102	102	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 29456I1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS2W | LCD2W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,1-Dichloroethene										
Trichloroethene	10.0	10.0	9.96	10.1	100	100	101	101	1	1.4
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29456I1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example: C= 32 ug/L

Sample I.D. 1, C:

Conc. = $\frac{(2892524)(10)(\quad)(\quad)}{(3128195)(0.287)(\quad)(\quad)}$

= 31.66128 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 12:43
Sample ID: IR06-062413-TB1	Date Analyzed: 06/26/13 12:43
Lab Samp ID: F106-01	Dilution Factor: 1
Lab File ID: RFQ399	Matrix : WATER
Ext Btch ID: VO05F13	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.11	10.00	91.1	70-140
4-BROMOFLUOROBENZENE	10.1	10.00	101	70-130
TOLUENE-D8	9.57	10.00	95.7	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 13:49
Sample ID: IR06-062413-25	Date Analyzed: 06/26/13 13:49
Lab Samp ID: F106-02	Dilution Factor: 1
Lab File ID: RFQ401	Matrix : WATER
Ext Btch ID: VO05F13	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	29	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	51	2.0	0.20
ISOPROPYL BENZENE	5.5	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	12	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	0.30J	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	27	2.0	0.40
O-XYLENE	7.8	0.50	0.20
XYLENES (TOTAL)	35	2.0	0.20
NAPHTHALENE	5.9	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-140
4-BROMOFLUOROBENZENE	9.59	10.00	95.9	70-130
TOLUENE-D8	9.02	10.00	90.2	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 13:14
Sample ID: IR06-062413-26	Date Analyzed: 06/26/13 13:14
Lab Samp ID: F106-03	Dilution Factor: 1
Lab File ID: RFQ400	Matrix : WATER
Ext Btch ID: VO05F13	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	0.55	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	1.5J	2.0	0.20
ISOPROPYL BENZENE	0.32J	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	0.71	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	7.5	2.0	0.40
O-XYLENE	1.9	0.50	0.20
XYLENES (TOTAL)	9.4	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.52	10.00	95.2	70-140
4-BROMOFLUOROBENZENE	9.98	10.00	99.8	70-130
TOLUENE-D8	9.44	10.00	94.4	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F106	Date Extracted: 06/26/13 11:41
Sample ID: MBLK1W	Date Analyzed: 06/26/13 11:41
Lab Samp ID: VO05F13B	Dilution Factor: 1
Lab File ID: RFQ397	Matrix : WATER
Ext Btch ID: VO05F13	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.88	10.00	88.8	70-140
4-BROMOFLUOROBENZENE	9.81	10.00	98.1	70-130
TOLUENE-D8	9.48	10.00	94.8	70-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO05F13B	VO05F13L	VO05F13C		
LAB FILE ID:	RFQ397	RFQ394	RFQ395		
DATE EXTRACTED:	06/26/1311:41	06/26/1309:16	06/26/1310:30	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1311:41	06/26/1309:16	06/26/1310:30	DATE RECEIVED:	06/26/13
PREP. BATCH:	VO05F13	VO05F13	VO05F13		
CALIB. REF:	RCQ458	RCQ458	RCQ458		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.22	92	10.0	9.30	93	1	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	9.95	99	10.0	10.2	102	3	70-130	30
1,1,2-Trichloroethane	ND	10.0	10.5	105	10.0	11.0	110	4	70-130	30
1,1-Dichloroethane	ND	10.0	10.1	101	10.0	9.66	97	4	70-130	30
1,1-Dichloroethene	ND	10.0	9.09	91	10.0	9.17	92	1	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.8	108	10.0	10.8	108	0	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	11.1	111	10.0	11.0	110	0	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	8.03	80	10.0	8.27	83	3	60-130	30
1,2-Dichlorobenzene	ND	10.0	10.0	100	10.0	10.3	103	2	70-130	30
1,2-Dichloroethane	ND	10.0	10.1	101	10.0	9.85	99	3	70-130	30
1,2-Dichloropropane	ND	10.0	10.2	102	10.0	9.97	100	3	70-130	30
1,3-Dichlorobenzene	ND	10.0	9.67	97	10.0	10.2	102	5	70-130	30
1,4-Dichlorobenzene	ND	10.0	9.88	99	10.0	10.3	103	5	70-130	30
2-Butanone	ND	50.0	49.3	99	50.0	48.3	97	2	60-140	30
2-Hexanone	ND	50.0	50.8	102	50.0	51.5	103	1	70-140	30
4-Methyl-2-Pentanone	ND	50.0	49.3	99	50.0	48.7	97	1	60-140	30
Acetone	ND	50.0	48.8	98	50.0	48.6	97	0	50-150	30
Benzene	ND	10.0	9.64	96	10.0	9.77	98	1	70-130	30
Bromochloromethane	ND	10.0	10.1	101	10.0	10.1	101	0	70-130	30
Bromodichloromethane	ND	10.0	9.27	93	10.0	9.15	91	1	70-130	30
Bromoform	ND	10.0	8.67	87	10.0	9.14	91	5	60-140	30
Bromomethane	ND	10.0	7.48	75	10.0	7.81	78	4	50-140	30
Carbon Disulfide	ND	10.0	9.47	95	10.0	9.28	93	2	50-140	30
Carbon Tetrachloride	ND	10.0	9.47	95	10.0	9.06	91	4	70-130	30
Chlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	0	70-130	30
Chloroethane	ND	10.0	9.91	99	10.0	10.1	101	2	70-140	30
Chloroform	ND	10.0	10.1	101	10.0	10.2	102	1	70-130	30
Chloromethane	ND	10.0	8.83	88	10.0	9.03	90	2	60-130	30
cis-1,2-Dichloroethene	ND	10.0	8.88	89	10.0	8.91	89	0	70-130	30
cis-1,3-Dichloropropene	ND	10.0	9.47	95	10.0	9.34	93	1	70-130	30
Dibromochloromethane	ND	10.0	9.26	93	10.0	9.14	91	1	70-130	30
Ethylbenzene	ND	10.0	9.94	99	10.0	10.1	101	1	70-130	30
Isopropyl Benzene	ND	10.0	10.3	103	10.0	10.6	106	2	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	9.52	95	10.0	9.73	97	2	70-140	30
Methylene Chloride	ND	10.0	10.2	102	10.0	9.78	98	4	70-130	30
Styrene	ND	10.0	10.2	102	10.0	10.3	103	1	70-130	30
Tetrachloroethene	ND	10.0	9.56	96	10.0	9.83	98	3	70-130	30
Toluene	ND	10.0	9.80	98	10.0	9.68	97	1	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	9.38	94	10.0	8.94	89	5	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	9.35	94	10.0	8.66	87	8	70-140	30
Trichloroethene	ND	10.0	9.87	99	10.0	9.71	97	2	70-130	30
Vinyl Acetate	ND	10.0	11.1	111	10.0	10.1	101	10	20-160	30
Vinyl Chloride	ND	10.0	9.77	98	10.0	9.30	93	5	60-150	30
m- and p-Xylene	ND	20.0	19.7	99	20.0	19.8	99	0	70-130	30
o-Xylene	ND	10.0	9.84	98	10.0	9.83	98	0	70-130	30
Xylenes (Total)	ND	30.0	29.6	99	30.0	29.6	99	0	70-130	30
Naphthalene	ND	10.0	9.64	96	10.0	10.2	102	5	50-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.41	94	10.0	8.92	89	70-140
4-Bromofluorobenzene	10.0	9.98	100	10.0	9.87	99	70-130
Toluene-d8	10.0	9.48	95	10.0	9.24	92	70-130

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 13:56
Sample ID: IR06-062413-TB1	Date Analyzed: 06/26/13 13:56
Lab Samp ID: F106-01	Dilution Factor: 1
Lab File ID: EF26007A	Matrix : WATER
Ext Btch ID: VG39F06	% Moisture : NA
Calib. Ref.: EF26003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.9	40.00	87.2	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/24/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/25/13
Batch No.	: 13F106	Date Extracted:	06/26/13 17:49
Sample ID:	IR06-062413-25	Date Analyzed:	06/26/13 17:49
Lab Samp ID:	F106-02	Dilution Factor:	1
Lab File ID:	EF26013A	Matrix	: WATER
Ext Btch ID:	VG39F06	% Moisture	: NA
Calib. Ref.:	EF26012A	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	370	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	43.8	40.00	109	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 14:34
Sample ID: IR06-062413-26	Date Analyzed: 06/26/13 14:34
Lab Samp ID: F106-03	Dilution Factor: 1
Lab File ID: EF26008A	Matrix : WATER
Ext Btch ID: VG39F06	% Moisture : NA
Calib. Ref.: EF26003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	24J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	35.3	40.00	88.2	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/26/13 15:13
Sample ID: IR12-062413-20	Date Analyzed: 06/26/13 15:13
Lab Samp ID: F106-04	Dilution Factor: 1
Lab File ID: EF26009A	Matrix : WATER
Ext Btch ID: VG39F06	% Moisture : NA
Calib. Ref.: EF26003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.9	40.00	84.9	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F106	Date Extracted: 06/26/13 13:17
Sample ID: MBLK1W	Date Analyzed: 06/26/13 13:17
Lab Samp ID: VG39F06B	Dilution Factor: 1
Lab File ID: EF26006A	Matrix : WATER
Ext Btch ID: VG39F06	% Moisture : NA
Calib. Ref.: EF26003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.5	40.00	86.2	70-130

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39F06B	VG39F06L	VG39F06C		
LAB FILE ID:	EF26006A	EF26004A	EF26005A		
DATE EXTRACTED:	06/26/1313:17	06/26/1311:55	06/26/1312:34	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1313:17	06/26/1311:55	06/26/1312:34	DATE RECEIVED:	06/26/13
PREP. BATCH:	VG39F06	VG39F06	VG39F06		
CALIB. REF:	EF26003A	EF26003A	EF26003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	464	93	500	491	98	6	60-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	39.2	98	40.0	40.1	100	70-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	IR12-062413-20				
LAB SAMP ID:	F106-04	F106-04M	F106-04S		
LAB FILE ID:	EF26009A	EF26010A	EF26011A		
DATE EXTRACTED:	06/26/1315:13	06/26/1315:52	06/26/1316:31	DATE COLLECTED:	06/24/13
DATE ANALYZED:	06/26/1315:13	06/26/1315:52	06/26/1316:31	DATE RECEIVED:	06/25/13
PREP. BATCH:	VG39F06	VG39F06	VG39F06		
CALIB. REF:	EF26003A	EF26003A	EF26003A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	497	99	500	491	98	1	50-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	39.8	100	40.0	39.4	98	60-140

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 14:00
Sample ID: IR06-062413-25	Date Analyzed: 07/01/13 13:53
Lab Samp ID: F106-02	Dilution Factor: 0.93
Lab File ID: LG01008A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	130	93	47
MOTOR OIL	ND	460	47

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	686	930.0	73.8	50-130
HEXACOSANE	208	232.5	89.4	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 14:00
Sample ID: IR06-062413-26	Date Analyzed: 07/01/13 14:10
Lab Samp ID: F106-03	Dilution Factor: 1.09
Lab File ID: LG01009A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	110	54
MOTOR OIL	ND	550	54

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	803	1090	73.7	50-130
HEXACOSANE	230	272.5	84.6	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062413-20	Date Analyzed: 07/01/13 14:27
Lab Samp ID: F106-04	Dilution Factor: 1.05
Lab File ID: LG01010A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	360	100	52
MOTOR OIL	ND	520	52

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	811	1050	77.2	50-130
HEXACOSANE	247	262.5	94.1	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F106	Date Extracted: 06/27/13 14:00
Sample ID: MBLK1W	Date Analyzed: 07/01/13 13:02
Lab Samp ID: DSF019WB	Dilution Factor: 1
Lab File ID: LG01005A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	824	1000	82.4	50-140
HEXACOSANE	230	250.0	92.0	70-150

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSF019WB	DSF019WL	DSF019WC		
LAB FILE ID:	LG01005A	LG01006A	LG01007A		
DATE EXTRACTED:	06/27/1314:00	06/27/1314:00	06/27/1314:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/01/1313:02	07/01/1313:19	07/01/1313:36	DATE RECEIVED:	06/27/13
PREP. BATCH:	DSF019W	DSF019W	DSF019W		
CALIB. REF:	LG01003A	LG01003A	LG01003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4270	85	5000	4130	83	3	70-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	927	93	1000	910	91	50-140
Hexacosane	250	243	97	250	239	96	70-150

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1.05	1.14	1.03		
SAMPLE ID:	IR12-062413-20				
LAB SAMP ID:	F106-04	F106-04M	F106-04S		
LAB FILE ID:	LG01010A	LG01011A	LG01012A		
DATE EXTRACTED:	06/27/1314:00	06/27/1314:00	06/27/1314:00	DATE COLLECTED:	06/24/13
DATE ANALYZED:	07/01/1314:27	07/01/1314:44	07/01/1315:01	DATE RECEIVED:	06/25/13
PREP. BATCH:	DSF019W	DSF019W	DSF019W		
CALIB. REF:	LG01003A	LG01003A	LG01003A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	360	5700	5040	82	5150	4710	84	2	60-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Bromobenzene	1140	963	84	1030	895	87	50-130
Hexacosane	285	268	94	257	254	99	70-140

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	06/24/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/25/13
Batch No.	: 13F106	Date Extracted:	06/27/13 13:30
Sample ID:	IR06-062413-25	Date Analyzed:	06/27/13 15:41 # 06/27/13 16:38
Lab Samp ID:	F106-02 #F106-02I	Dilution Factor:	1 # 50
Lab File ID:	FF27035A #FF27041A	Matrix	: WATER
Ext Btch ID:	DGF011W	% Moisture	: NA
Calib. Ref.:	FF27026A #FF27038A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	1200	250	17

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR06-062413-25	Date Analyzed: 06/27/13 15:41
Lab Samp ID: F106-02	Dilution Factor: 1
Lab File ID: FF27035A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	210E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR06-062413-25DL	Date Analyzed: 06/27/13 16:38
Lab Samp ID: F106-02I	Dilution Factor: 50
Lab File ID: FF27041A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	250	32
ETHENE	ND	250	30
METHANE	1200	250	17

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR06-062413-26	Date Analyzed: 06/27/13 15:50 # 06/27/13 16:50
Lab Samp ID: F106-03 #F106-03I	Dilution Factor: 1 # 20
Lab File ID: FF27036A #FF27042A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A #FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	200	100	6.8

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR06-062413-26	Date Analyzed: 06/27/13 15:50
Lab Samp ID: F106-03	Dilution Factor: 1
Lab File ID: FF27036A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	110E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR06-062413-26DL	Date Analyzed: 06/27/13 16:50
Lab Samp ID: F106-03I	Dilution Factor: 20
Lab File ID: FF27042A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	100	13
ETHENE	ND	100	12
METHANE	200	100	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	06/24/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/25/13
Batch No.	: 13F106	Date Extracted:	06/27/13 13:30
Sample ID:	IR12-062413-20	Date Analyzed:	06/27/13 15:59 # 06/27/13 16:59
Lab Samp ID:	F106-04 #F106-04I	Dilution Factor:	1 # 200
Lab File ID:	FF27037A #FF27043A	Matrix	: WATER
Ext Btch ID:	DGF011W	% Moisture	: NA
Calib. Ref.:	FF27026A #FF27038A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	5900	1000	68

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062413-20	Date Analyzed: 06/27/13 15:59
Lab Samp ID: F106-04	Dilution Factor: 1
Lab File ID: FF27037A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	98E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/24/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/25/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062413-20DL	Date Analyzed: 06/27/13 16:59
Lab Samp ID: F106-04I	Dilution Factor: 200
Lab File ID: FF27043A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1000	130
ETHENE	ND	1000	120
METHANE	5900	1000	68

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F106	Date Extracted: 06/27/13 13:30
Sample ID: MBLK1W	Date Analyzed: 06/27/13 15:13
Lab Samp ID: DGF011WB	Dilution Factor: 1
Lab File ID: FF27032A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF011WB	DGF011WL	DGF011WC		
LAB FILE ID:	FF27032A	FF27033A	FF27034A		
DATE EXTRACTED:	06/27/1313:30	06/27/1313:30	06/27/1313:30	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1315:13	06/27/1315:23	06/27/1315:32	DATE RECEIVED:	06/27/13
PREP. BATCH:	DGF011W	DGF011W	DGF011W		
CALIB. REF:	FF27026A	FF27026A	FF27026A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	23.2	92	25.4	22.9	90	1	70-140	30
Ethene	ND	23.7	22.0	93	23.7	21.6	91	2	70-140	30
Methane	ND	13.6	12.2	90	13.6	11.8	87	3	70-130	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	IR12-062413-20				
LAB SAMP ID:	F106-04	F106-04M	F106-04S		
LAB FILE ID:	FF27037A	FF27039A	FF27040A		
DATE EXTRACTED:	06/27/1313:30	06/27/1313:30	06/27/1313:30	DATE COLLECTED:	06/24/13
DATE ANALYZED:	06/27/1315:59	06/27/1316:19	06/27/1316:29	DATE RECEIVED:	06/25/13
PREP. BATCH:	DGF011W	DGF011W	DGF011W		
CALIB. REF:	FF27026A	FF27038A	FF27038A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	19.3	76	25.4	19.7	78	2	60-140	30
Ethene	ND	23.7	17.6	74	23.7	17.8	75	1	20-160	30
Methane	98.2E	13.6	107E	63	13.6	98.9E	5*	8	10-160	30

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/24/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/25/13
SDG NO.	: 13F106	Date Extracted:	06/27/13 11:10
Sample ID:	IR12-062413-20T	Date Analyzed:	07/02/13 20:01
Lab Samp ID:	F106-05	Dilution Factor:	1
Lab File ID:	F6G02073	Matrix :	WATER
Ext Btch ID:	IMF024W	% Moisture :	NA
Calib. Ref.:	F6G02068	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	85.1	1.00	0.200
Barium	131	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	99300	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.380J	1.00	0.200
Copper	0.675J	1.00	0.500
Iron	7920	1000	10.0
Lead	ND	1.00	0.100
Magnesium	14300	1000	10.0
Manganese	495	1.00	0.200
Molybdenum	0.839J	2.00	0.500
Nickel	1.57	1.00	0.500
Potassium	7830	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	17000	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	0.563J	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F106	Date Extracted:	06/27/13 11:10
Sample ID:	MBLK1W	Date Analyzed:	07/02/13 19:02
Lab Samp ID:	IMF024WB	Dilution Factor:	1
Lab File ID:	F6G02059	Matrix :	WATER
Ext Btch ID:	IMF024W	% Moisture :	NA
Calib. Ref.:	F6G02057	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMF024WB	IMF024WL	IMF024WC		
LAB FILE ID:	F6G02059	F6G02060	F6G02061		
DATIME EXTRCTD:	06/27/1311:10	06/27/1311:10	06/27/1311:10	DATE COLLECTED:	NA
DATIME ANALYZD:	07/02/1319:02	07/02/1319:06	07/02/1319:10	DATE RECEIVED:	06/27/13
PREP. BATCH:	IMF024W	IMF024W	IMF024W		
CALIB. REF:	F6G02057	F6G02057	F6G02057		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2530	101	2500	2540	101	0	80-120	20
Antimony	ND	25.0	25.5	102	25.0	25.6	102	0	80-120	20
Arsenic	ND	25.0	24.7	99	25.0	25.3	101	2	80-120	20
Barium	ND	25.0	25.3	101	25.0	25.4	102	0	80-120	20
Beryllium	ND	25.0	23.8	95	25.0	23.6	95	1	80-120	20
Cadmium	ND	25.0	24.6	98	25.0	24.8	99	1	80-120	20
Calcium	ND	2500	2780	111	2500	2770	111	0	80-120	20
Chromium	ND	25.0	25.1	100	25.0	24.7	99	1	80-120	20
Cobalt	ND	25.0	24.4	98	25.0	24.3	97	0	80-120	20
Copper	ND	25.0	25.5	102	25.0	25.2	101	1	80-120	20
Iron	ND	2500	2620	105	2500	2610	105	0	80-120	20
Lead	ND	25.0	25.7	103	25.0	25.6	103	0	80-120	20
Magnesium	ND	2500	2510	100	2500	2490	99	1	80-120	20
Manganese	ND	25.0	25.2	101	25.0	24.9	100	1	80-120	20
Molybdenum	ND	25.0	24.1	97	25.0	24.2	97	0	80-120	20
Nickel	ND	25.0	25.0	100	25.0	24.9	100	0	80-120	20
Potassium	ND	2500	2730	109	2500	2680	107	2	80-120	20
Selenium	ND	25.0	25.9	104	25.0	26.0	104	0	80-120	20
Silver	ND	25.0	24.8	99	25.0	24.9	99	0	80-120	20
Sodium	ND	2500	2680	107	2500	2700	108	1	80-120	20
Thallium	ND	25.0	25.5	102	25.0	25.4	102	1	80-120	20
Vanadium	ND	25.0	25.4	102	25.0	25.2	101	1	80-120	20
Zinc	ND	50.0	59.7	119	50.0	55.4	111	7	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	IR12-062413-20T				
CONTROL NO.:	F106-05	F106-05M	F106-05S		
LAB FILE ID:	F6G02073	F6G02070	F6G02071		
DATIME EXTRCTD:	06/27/1311:10	06/27/1311:10	06/27/1311:10	DATE COLLECTED:	06/24/13
DATIME ANALYZD:	07/02/1320:01	07/02/1319:48	07/02/1319:52	DATE RECEIVED:	06/25/13
PREP. BATCH:	IMF024W	IMF024W	IMF024W		
CALIB. REF:	F6G02068	F6G02068	F6G02068		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2420	97	2500	2450	98	2	75-125	20
Antimony	ND	25.0	25.3	101	25.0	25.6	103	1	75-125	20
Arsenic	85.1	25.0	111	103	25.0	112	108	1	75-125	20
Barium	131	25.0	155	98	25.0	156	102	1	75-125	20
Beryllium	ND	25.0	22.5	90	25.0	22.6	91	0	75-125	20
Cadmium	ND	25.0	24.1	97	25.0	24.4	98	1	75-125	20
Calcium	99300	2500	101000	82	2500	102000	122	1	75-125	20
Chromium	ND	25.0	24.3	97	25.0	24.5	98	1	75-125	20
Cobalt	0.380J	25.0	23.0	91	25.0	23.2	91	1	75-125	20
Copper	0.675J	25.0	23.8	93	25.0	23.7	92	0	75-125	20
Iron	7920	2500	10400	99	2500	10500	104	1	75-125	20
Lead	ND	25.0	24.8	99	25.0	24.8	99	0	75-125	20
Magnesium	14300	2500	16400	84	2500	16500	89	1	75-125	20
Manganese	495	25.0	518	92	25.0	517	85	0	75-125	20
Molybdenum	0.839J	25.0	24.9	96	25.0	25.2	97	1	75-125	20
Nickel	1.57	25.0	25.1	94	25.0	25.0	94	0	75-125	20
Potassium	7830	2500	10500	106	2500	10700	113	2	75-125	20
Selenium	ND	25.0	24.9	100	25.0	25.0	100	1	75-125	20
Silver	ND	25.0	23.8	95	25.0	24.0	96	1	75-125	20
Sodium	17000	2500	19400	94	2500	19500	99	1	75-125	20
Thallium	ND	25.0	24.9	100	25.0	25.0	100	0	75-125	20
Vanadium	0.563J	25.0	25.4	99	25.0	25.8	101	2	75-125	20
Zinc	ND	50.0	50.4	101	50.0	54.5	109	8	75-125	20

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/24/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/25/13
SDG NO.	: 13F106	Date Extracted:	06/27/13 11:10
Sample ID:	IR12-062413-20	Date Analyzed:	07/02/13 19:27
Lab Samp ID:	F106-04	Dilution Factor:	1
Lab File ID:	F6G02065	Matrix :	WATER
Ext Btch ID:	IMF024W	% Moisture :	NA
Calib. Ref.:	F6G02057	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	84.7	1.00	0.200
Barium	130	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	100000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.382J	1.00	0.200
Copper	0.508J	1.00	0.500
Iron	7730	1000	10.0
Lead	ND	1.00	0.100
Magnesium	14300	1000	10.0
Manganese	499	1.00	0.200
Molybdenum	0.856J	2.00	0.500
Nickel	1.52	1.00	0.500
Potassium	7960	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	17300	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F106	Date Extracted:	06/27/13 11:10
Sample ID:	MBLK1W	Date Analyzed:	07/02/13 19:02
Lab Samp ID:	IMF024WB	Dilution Factor:	1
Lab File ID:	F6G02059	Matrix :	WATER
Ext Btch ID:	IMF024W	% Moisture :	NA
Calib. Ref.:	F6G02057	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMF024WB	IMF024WL	IMF024WC		
LAB FILE ID:	F6G02059	F6G02060	F6G02061		
DATIME EXTRCTD:	06/27/1311:10	06/27/1311:10	06/27/1311:10	DATE COLLECTED:	NA
DATIME ANALYZD:	07/02/1319:02	07/02/1319:06	07/02/1319:10	DATE RECEIVED:	06/27/13
PREP. BATCH:	IMF024W	IMF024W	IMF024W		
CALIB. REF:	F6G02057	F6G02057	F6G02057		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2530	101	2500	2540	101	0	80-120	20
Antimony	ND	25.0	25.5	102	25.0	25.6	102	0	80-120	20
Arsenic	ND	25.0	24.7	99	25.0	25.3	101	2	80-120	20
Barium	ND	25.0	25.3	101	25.0	25.4	102	0	80-120	20
Beryllium	ND	25.0	23.8	95	25.0	23.6	95	1	80-120	20
Cadmium	ND	25.0	24.6	98	25.0	24.8	99	1	80-120	20
Calcium	ND	2500	2780	111	2500	2770	111	0	80-120	20
Chromium	ND	25.0	25.1	100	25.0	24.7	99	1	80-120	20
Cobalt	ND	25.0	24.4	98	25.0	24.3	97	0	80-120	20
Copper	ND	25.0	25.5	102	25.0	25.2	101	1	80-120	20
Iron	ND	2500	2620	105	2500	2610	105	0	80-120	20
Lead	ND	25.0	25.7	103	25.0	25.6	103	0	80-120	20
Magnesium	ND	2500	2510	100	2500	2490	99	1	80-120	20
Manganese	ND	25.0	25.2	101	25.0	24.9	100	1	80-120	20
Molybdenum	ND	25.0	24.1	97	25.0	24.2	97	0	80-120	20
Nickel	ND	25.0	25.0	100	25.0	24.9	100	0	80-120	20
Potassium	ND	2500	2730	109	2500	2680	107	2	80-120	20
Selenium	ND	25.0	25.9	104	25.0	26.0	104	0	80-120	20
Silver	ND	25.0	24.8	99	25.0	24.9	99	0	80-120	20
Sodium	ND	2500	2680	107	2500	2700	108	1	80-120	20
Thallium	ND	25.0	25.5	102	25.0	25.4	102	1	80-120	20
Vanadium	ND	25.0	25.4	102	25.0	25.2	101	1	80-120	20
Zinc	ND	50.0	59.7	119	50.0	55.4	111	7	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	IR12-062413-20				
CONTROL NO.:	F106-04	F106-04M	F106-04S		
LAB FILE ID:	F6G02065	F6G02062	F6G02063		
DATIME EXTRCTD:	06/27/1311:10	06/27/1311:10	06/27/1311:10	DATE COLLECTED:	06/24/13
DATIME ANALYZD:	07/02/1319:27	07/02/1319:14	07/02/1319:18	DATE RECEIVED:	06/25/13
PREP. BATCH:	IMF024W	IMF024W	IMF024W		
CALIB. REF:	F6G02057	F6G02057	F6G02057		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2450	98	2500	2430	97	1	75-125	20
Antimony	ND	25.0	25.8	103	25.0	25.4	101	2	75-125	20
Arsenic	84.7	25.0	111	106	25.0	109	99	2	75-125	20
Barium	130	25.0	154	97	25.0	152	88	1	75-125	20
Beryllium	ND	25.0	22.9	92	25.0	22.6	91	1	75-125	20
Cadmium	ND	25.0	24.5	98	25.0	24.2	97	1	75-125	20
Calcium	100000	2500	103000	108	2500	101000	52*	1	75-125	20
Chromium	ND	25.0	24.9	100	25.0	24.5	98	2	75-125	20
Cobalt	0.382J	25.0	23.7	93	25.0	23.4	92	1	75-125	20
Copper	0.508J	25.0	24.2	95	25.0	23.8	93	2	75-125	20
Iron	7730	2500	10400	105	2500	10200	99	1	75-125	20
Lead	ND	25.0	24.9	99	25.0	24.6	98	1	75-125	20
Magnesium	14300	2500	16800	98	2500	16400	86	2	75-125	20
Manganese	499	25.0	526	108	25.0	516	70*	2	75-125	20
Molybdenum	0.856J	25.0	25.6	99	25.0	25.1	97	2	75-125	20
Nickel	1.52	25.0	25.3	95	25.0	25.0	94	1	75-125	20
Potassium	7960	2500	10700	111	2500	10500	100	3	75-125	20
Selenium	ND	25.0	25.5	102	25.0	25.1	101	1	75-125	20
Silver	ND	25.0	24.1	96	25.0	23.8	95	1	75-125	20
Sodium	17300	2500	20000	106	2500	19500	88	2	75-125	20
Thallium	ND	25.0	25.0	100	25.0	24.8	99	1	75-125	20
Vanadium	ND	25.0	26.0	104	25.0	25.6	102	1	75-125	20
Zinc	ND	50.0	59.1	118	50.0	52.5	105	12	75-125	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 6020A

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MATRIX: WATER % MOISTURE: NA
DILTN FACTR: 1 1
SAMPLE ID: IR12-062413-20
CONTROL NO.: F106-04 F106-04A
LAB FILE ID: F6G02065 F6G02064
DATIME EXTRCTD: 06/27/1311:10 06/27/1311:10 DATE COLLECTED: 06/24/13
DATIME ANALYZD: 07/02/1319:27 07/02/1319:23 DATE RECEIVED: 06/25/13
PREP. BATCH: IMF024W IMF024W
CALIB. REF: F6G02057 F6G02057

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Aluminum	ND	2500	2610	104	80-120
Antimony	ND	25.0	26.1	104	80-120
Arsenic	84.7	25.0	110	100	80-120
Barium	130	25.0	154	97	80-120
Beryllium	ND	25.0	23.7	95	80-120
Cadmium	ND	25.0	25.2	101	80-120
Calcium	100000	2500	102000	84	80-120
Chromium	ND	25.0	25.3	101	80-120
Cobalt	0.382J	25.0	24.1	95	80-120
Copper	0.508J	25.0	24.8	97	80-120
Iron	7730	2500	10500	109	80-120
Lead	ND	25.0	25.4	102	80-120
Magnesium	14300	2500	16800	100	80-120
Manganese	499	25.0	521	88	80-120
Molybdenum	0.856J	25.0	25.9	100	80-120
Nickel	1.52	25.0	25.6	96	80-120
Potassium	7960	2500	10700	110	80-120
Selenium	ND	25.0	26.0	104	80-120
Silver	ND	25.0	23.0	92	80-120
Sodium	17300	2500	19800	98	80-120
Thallium	ND	25.0	25.9	103	80-120
Vanadium	ND	25.0	26.3	105	80-120
Zinc	ND	50.0	56.1	112	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 6020A

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	5
SAMPLE ID:	IR12-062413-20	IR12-062413-20
EMAX SAMP ID:	F106-04	F106-04J
LAB FILE ID:	F6G02065	F6G02066
DATE EXTRACTED:	06/27/1311:10	06/27/1311:10
DATE ANALYZED:	07/02/1319:27	07/02/1319:31
PREP. BATCH:	IMF024W	IMF024W
CALIB. REF:	F6G02057	F6G02057

DATE COLLECTED: 06/24/13
DATE RECEIVED: 06/25/13

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Aluminum	ND	ND	0	10
Antimony	ND	ND	0	10
Arsenic	84.7	85.6	1	10
Barium	130	133	2	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Calcium	100000	102000	2	10
Chromium	ND	ND	0	10
Cobalt	0.382J	ND	NA	10
Copper	0.508J	ND	NA	10
Iron	7730	8020	4	10
Lead	ND	ND	0	10
Magnesium	14300	15000	5	10
Manganese	499	528	6	10
Molybdenum	0.856J	ND	NA	10
Nickel	1.52	ND	NA	10
Potassium	7960	8160	3	10
Selenium	ND	ND	0	10
Silver	ND	ND	0	10
Sodium	17300	17900	4	10
Thallium	ND	ND	0	10
Vanadium	ND	ND	0	10
Zinc	ND	ND	0	10

METHOD 7470A
MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
Instrument ID : 47

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062413-20T	F106-05	ND	1	NA	0.200	0.100	07/03/1316:12	07/03/1311:30	M47G002020	M47G002009	HGG003W	06/24/13	06/25/13
IR12-062413-20TMS	F106-05M	5.49	1	NA	0.200	0.100	07/03/1316:22	07/03/1311:30	M47G002024	M47G002021	HGG003W	06/24/13	06/25/13
IR12-062413-20TMSD	F106-05S	5.42	1	NA	0.200	0.100	07/03/1316:24	07/03/1311:30	M47G002025	M47G002021	HGG003W	06/24/13	06/25/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	IR12-062413-20T				
CONTROL NO.:	F106-05	F106-05M	F106-05S		
LAB FILE ID:	M47G002020	M47G002024	M47G002025		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	06/24/13
DATIME ANALYZD:	07/03/1316:12	07/03/1316:22	07/03/1316:24	DATE RECEIVED:	06/25/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002021	M47G002021		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.49	110	5	5.42	108	1	75-125	20

METHOD 7470A
DISSOLVED MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
Instrument ID : 47

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062413-20	F106-04	ND	1	NA	0.200	0.100	07/03/1316:01	07/03/1311:30	M47G002015	M47G002009	HGG003W	06/24/13	06/25/13
IR12-062413-20MS	F106-04M	5.35	1	NA	0.200	0.100	07/03/1316:05	07/03/1311:30	M47G002017	M47G002009	HGG003W	06/24/13	06/25/13
IR12-062413-20MSD	F106-04S	5.41	1	NA	0.200	0.100	07/03/1316:08	07/03/1311:30	M47G002018	M47G002009	HGG003W	06/24/13	06/25/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F106
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	IR12-062413-20				
CONTROL NO.:	F106-04	F106-04M	F106-04S		
LAB FILE ID:	M47G002015	M47G002017	M47G002018		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	06/24/13
DATIME ANALYZD:	07/03/1316:01	07/03/1316:05	07/03/1316:08	DATE RECEIVED:	06/25/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.35	107	5	5.41	108	1	75-125	20

METHOD 300.0
CHLORIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICF037WB	ND	1	NA	0.200	0.100	06/27/1310:30	NA	AF29-03	AF29-01	ICF037W	NA	NA
LCS1W	ICF037WL	2.02	1	NA	0.200	0.100	06/27/1310:46	NA	AF29-04	AF29-01	ICF037W	NA	NA
LCD1W	ICF037WC	2.01	1	NA	0.200	0.100	06/27/1311:03	NA	AF29-05	AF29-01	ICF037W	NA	NA
IR06-062413-26	F106-03I	123	20	NA	4.00	2.00	06/27/1320:46	NA	AF29-40	AF29-30	ICF037W	06/24/1315:45	06/25/13
MBLK2W	ICF039WB	ND	1	NA	0.200	0.100	06/27/1321:51	NA	AF29-44	AF29-42	ICF039W	NA	NA
LCS2W	ICF039WL	2.02	1	NA	0.200	0.100	06/27/1322:07	NA	AF29-45	AF29-42	ICF039W	NA	NA
LCD2W	ICF039WC	2.02	1	NA	0.200	0.100	06/27/1322:23	NA	AF29-46	AF29-42	ICF039W	NA	NA
IR06-062413-25	F106-02I	12.2	2	NA	0.400	0.200	06/28/1301:05	NA	AF29-56	AF29-54	ICF039W	06/24/1315:20	06/25/13
MBLK3W	ICF041WB	ND	1	NA	0.200	0.100	06/28/1307:01	NA	AF29-78	AF29-76	ICF041W	NA	NA
LCS3W	ICF041WL	2.02	1	NA	0.200	0.100	06/28/1307:17	NA	AF29-79	AF29-76	ICF041W	NA	NA
LCD3W	ICF041WC	2.02	1	NA	0.200	0.100	06/28/1307:33	NA	AF29-80	AF29-76	ICF041W	NA	NA
IR12-062413-20	F106-04I	22.9	5	NA	1.00	0.500	06/28/1312:08	NA	AF29-97	AF29-88	ICF041W	06/24/1315:40	06/25/13
IR12-062413-20DUP	F106-04ID	22.4	5	NA	1.00	0.500	06/28/1312:24	NA	AF29-98	AF29-88	ICF041W	06/24/1315:40	06/25/13
IR12-062413-20MS	F106-04IM	31.9	5	NA	1.00	0.500	06/28/1312:40	NA	AF29-99	AF29-88	ICF041W	06/24/1315:40	06/25/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICF037WB	ICF037WL	ICF037WC		
LAB FILE ID:	AF29-03	AF29-04	AF29-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1310:30	06/27/1310:46	06/27/1311:03	DATE RECEIVED:	NA
PREP. BATCH:	ICF037W	ICF037W	ICF037W		
CALIB. REF:	AF29-01	AF29-01	AF29-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	2.02	101	2	2.01	101	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICF039WB	ICF039WL	ICF039WC		
LAB FILE ID:	AF29-44	AF29-45	AF29-46		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1321:51	06/27/1322:07	06/27/1322:23	DATE RECEIVED:	NA
PREP. BATCH:	ICF039W	ICF039W	ICF039W		
CALIB. REF:	AF29-42	AF29-42	AF29-42		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	2.02	101	2	2.02	101	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK3W				
LAB SAMP ID:	ICF041WB	ICF041WL	ICF041WC		
LAB FILE ID:	AF29-78	AF29-79	AF29-80		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/28/1307:01	06/28/1307:17	06/28/1307:33	DATE RECEIVED:	NA
PREP. BATCH:	ICF041W	ICF041W	ICF041W		
CALIB. REF:	AF29-76	AF29-76	AF29-76		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	2.02	101	2	2.02	101	0	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID: IR12-062413-20
LAB SAMP ID: F106-04I F106-04IM
LAB FILE ID: AF29-97 AF29-99
DATE EXTRACTED: NA NA DATE COLLECTED: 06/24/13 15:40
DATE ANALYZED: 06/28/1312:08 06/28/1312:40 DATE RECEIVED: 06/25/13
PREP. BATCH: ICF041W ICF041W
CALIB. REF: AF29-88 AF29-88

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Chloride-Cl	22.9	10	31.9	90	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	5	5		
SAMPLE ID:	IR12-062413-20			
EMAX SAMP ID:	F106-04I	F106-04ID		
LAB FILE ID:	AF29-97	AF29-98		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	06/24/13 15:40
DATE ANALYZED:	06/28/1312:08	06/28/1312:24	DATE RECEIVED:	06/25/13
PREP. BATCH:	ICF041W	ICF041W		
CALIB. REF:	AF29-88	AF29-88		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Chloride-Cl	22.9	22.4	2	20

METHOD 160.1
TOTAL DISSOLVED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF004WB	ND	1	NA	10	10	06/25/1315:45	NA	13TDF00401	13TDF004	TDF004W	NA	NA
LCS1W	TDF004WL	1000	1	NA	10	10	06/25/1315:45	NA	13TDF00402	13TDF004	TDF004W	NA	NA
LCD1W	TDF004WC	1010	1	NA	10	10	06/25/1315:45	NA	13TDF00403	13TDF004	TDF004W	NA	NA
IR12-062413-20	F106-04	392	1	NA	10	10	06/25/1315:45	NA	13TDF00404	13TDF004	TDF004W	06/24/1315:40	06/25/13
IR12-062413-20DUP	F106-04D	388	1	NA	10	10	06/25/1315:45	NA	13TDF00405	13TDF004	TDF004W	06/24/1315:40	06/25/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 160.1

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	TDF004WB	TDF004WL	TDF004WC
LAB FILE ID :	13TDF00401	13TDF00402	13TDF00403
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/25/1315:45	06/25/1315:45	06/25/1315:45
PREP BATCH :	TDF004W	TDF004W	TDF004W
CALIBRATION REF:	13TDF004	13TDF004	13TDF004

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TDS	ND	1000	1000	100	1000	1010	101	1	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 160.1

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MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	IR12-062413-20	IR12-062413-20DUP
LAB SAMPLE ID :	F106-04	F106-04D
LAB FILE ID :	13TDF00404	13TDF00405
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/25/1315:45	06/25/1315:45
PREP BATCH :	TDF004W	TDF004W
CALIBRATION REF:	13TDF004	13TDF004

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
TDS	392	388	1	20

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICF037WB	ND	1	NA	0.500	0.200	06/27/1310:30	NA	AF29-03	AF29-01	ICF037W	NA	NA
LCS1W	ICF037WL	4.98	1	NA	0.500	0.200	06/27/1310:46	NA	AF29-04	AF29-01	ICF037W	NA	NA
LCD1W	ICF037WC	4.96	1	NA	0.500	0.200	06/27/1311:03	NA	AF29-05	AF29-01	ICF037W	NA	NA
IR06-062413-26	F106-03I	39.5	20	NA	10.0	4.00	06/27/1320:46	NA	AF29-40	AF29-30	ICF037W	06/24/1315:45	06/25/13
MBLK2W	ICF039WB	ND	1	NA	0.500	0.200	06/27/1321:51	NA	AF29-44	AF29-42	ICF039W	NA	NA
LCS2W	ICF039WL	4.98	1	NA	0.500	0.200	06/27/1322:07	NA	AF29-45	AF29-42	ICF039W	NA	NA
LCD2W	ICF039WC	4.98	1	NA	0.500	0.200	06/27/1322:23	NA	AF29-46	AF29-42	ICF039W	NA	NA
IR12-062413-20	F106-04	1.19	1	NA	0.500	0.200	06/27/1322:56	NA	AF29-48	AF29-42	ICF039W	06/24/1315:40	06/25/13
IR12-062413-20DUP	F106-04D	1.08	1	NA	0.500	0.200	06/27/1323:12	NA	AF29-49	AF29-42	ICF039W	06/24/1315:40	06/25/13
IR12-062413-20MS	F106-04M	6.20	1	NA	0.500	0.200	06/27/1323:28	NA	AF29-50	AF29-42	ICF039W	06/24/1315:40	06/25/13
IR06-062413-25	F106-02I	18.3	2	NA	1.00	0.400	06/28/1301:05	NA	AF29-56	AF29-54	ICF039W	06/24/1315:20	06/25/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICF037WB	ICF037WL	ICF037WC		
LAB FILE ID:	AF29-03	AF29-04	AF29-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1310:30	06/27/1310:46	06/27/1311:03	DATE RECEIVED:	NA
PREP. BATCH:	ICF037W	ICF037W	ICF037W		
CALIB. REF:	AF29-01	AF29-01	AF29-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.98	100	5	4.96	99	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICF039WB	ICF039WL	ICF039WC		
LAB FILE ID:	AF29-44	AF29-45	AF29-46		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1321:51	06/27/1322:07	06/27/1322:23	DATE RECEIVED:	NA
PREP. BATCH:	ICF039W	ICF039W	ICF039W		
CALIB. REF:	AF29-42	AF29-42	AF29-42		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.98	100	5	4.98	100	0	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: IR12-062413-20
LAB SAMP ID: F106-04 F106-04M
LAB FILE ID: AF29-48 AF29-50
DATE EXTRACTED: NA NA DATE COLLECTED: 06/24/13 15:40
DATE ANALYZED: 06/27/1322:56 06/27/1323:28 DATE RECEIVED: 06/25/13
PREP. BATCH: ICF039W ICF039W
CALIB. REF: AF29-42 AF29-42

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Sulfate	1.19	5	6.2	100	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F106
METHOD: METHOD 300.0

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: IR12-062413-20
EMAX SAMP ID: F106-04 F106-04D
LAB FILE ID: AF29-48 AF29-49
DATE EXTRACTED: NA NA DATE COLLECTED: 06/24/13 15:40
DATE ANALYZED: 06/27/1322:56 06/27/1323:12 DATE RECEIVED: 06/25/13
PREP. BATCH: ICF039W ICF039W
CALIB. REF: AF29-42 AF29-42

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Sulfate	1.19	1.08	9	20

METHOD 353.3
NITRATE-N

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG001WB	ND	1	NA	0.1	0.02	07/05/1315:11	NA	13NAG00110	13NAG001	NAG001W	NA	NA
LCS1W	NAG001WL	0.515	1	NA	0.1	0.02	07/05/1315:12	NA	13NAG00111	13NAG001	NAG001W	NA	NA
LCD1W	NAG001WC	0.510	1	NA	0.1	0.02	07/05/1315:12	NA	13NAG00112	13NAG001	NAG001W	NA	NA
IR06-062413-25	F106-02	ND	1	NA	0.1	0.02	07/05/1315:20	NA	13NAG00115	13NAG001	NAG001W	06/24/1315:20	06/25/13
IR06-062413-26	F106-03	ND	1	NA	0.1	0.02	07/05/1315:20	NA	13NAG00116	13NAG001	NAG001W	06/24/1315:45	06/25/13
IR12-062413-20	F106-04	ND	1	NA	0.1	0.02	07/05/1315:20	NA	13NAG00117	13NAG001	NAG001W	06/24/1315:40	06/25/13
IR12-062413-20DUP	F106-04D	ND	1	NA	0.1	0.02	07/05/1315:21	NA	13NAG00118	13NAG001	NAG001W	06/24/1315:40	06/25/13
IR12-062413-20MS	F106-04M	0.480	1	NA	0.1	0.02	07/05/1315:21	NA	13NAG00119	13NAG001	NAG001W	06/24/1315:40	06/25/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 353.3

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	NAG001WB	NAG001WL	NAG001WC
LAB FILE ID :	13NAG00110	13NAG00111	13NAG00112
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	07/05/1315:11	07/05/1315:12	07/05/1315:12
PREP BATCH :	NAG001W	NAG001W	NAG001W
CALIBRATION REF:	13NAG001	13NAG001	13NAG001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
NITRATE-N	ND	0.5	0.515	103	0.5	0.510	102	1	80-120	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 353.3

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MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID : IR12-062413-20 IR12-062413-20MS
LAB SAMPLE ID : F106-04 F106-04M
LAB FILE ID : 13NAG00117 13NAG00119
DATE PREPARED : NA NA
DATE ANALYZED : 07/05/1315:20 07/05/1315:21
PREP BATCH : NAG001W NAG001W
CALIBRATION REF: 13NAG001 13NAG001

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	QC LIMIT (%)
NITRATE-N	ND	0.5	0.480	96	75-125

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 353.3

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MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	IR12-062413-20	IR12-062413-20DUP
LAB SAMPLE ID :	F106-04	F106-04D
LAB FILE ID :	13NAG00117	13NAG00118
DATE PREPARED :	NA	NA
DATE ANALYZED :	07/05/1315:20	07/05/1315:21
PREP BATCH :	NAG001W	NAG001W
CALIBRATION REF:	13NAG001	13NAG001

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
NITRATE-N	ND	ND	0	20

METHOD 376.1
SULFIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106

Matrix : WATER
InstrumentID : NA

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SDF001WB	ND	1	NA	1	1	06/27/1312:52	NA	13SDF00101	13SDF001	SDF001W	NA	NA
LCS1W	SDF001WL	2.13	1	NA	1	1	06/27/1313:00	NA	13SDF00102	13SDF001	SDF001W	NA	NA
LCD1W	SDF001WC	2.17	1	NA	1	1	06/27/1313:05	NA	13SDF00103	13SDF001	SDF001W	NA	NA
IR06-062413-25	F106-02	ND	1	NA	1	1	06/27/1313:09	NA	13SDF00104	13SDF001	SDF001W	06/24/1315:20	06/25/13
IR06-062413-26	F106-03	ND	1	NA	1	1	06/27/1313:15	NA	13SDF00105	13SDF001	SDF001W	06/24/1315:45	06/25/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : METHOD 376.1

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SDF001WB	SDF001WL	SDF001WC
LAB FILE ID :	13SDF00101	13SDF00102	13SDF00103
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/27/1312:52	06/27/1313:00	06/27/1313:05
PREP BATCH :	SDF001W	SDF001W	SDF001W
CALIBRATION REF:	13SDF001	13SDF001	13SDF001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
SULFIDE	ND	2	2.13	107	2	2.17	109	2	80-120	20

METHOD 160.2
TOTAL SUSPENDED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F106
Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SSF006WB	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00601	13SSF006	SSF006W	NA	NA
LCS1W	SSF006WL	53	1	NA	10	10	06/27/1311:43	NA	13SSF00602	13SSF006	SSF006W	NA	NA
LCD1W	SSF006WC	52	1	NA	10	10	06/27/1311:43	NA	13SSF00603	13SSF006	SSF006W	NA	NA
IR12-062413-20	F106-04	16	1	NA	10	10	06/27/1311:43	NA	13SSF00604	13SSF006	SSF006W	06/24/1315:40	06/25/13
IR12-062413-20DUP	F106-04D	16	1	NA	10	10	06/27/1311:43	NA	13SSF00605	13SSF006	SSF006W	06/24/1315:40	06/25/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 160.2

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SSF006WB	SSF006WL	SSF006WC
LAB FILE ID :	13SSF00601	13SSF00602	13SSF00603
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/27/1311:43	06/27/1311:43	06/27/1311:43
PREP BATCH :	SSF006W	SSF006W	SSF006W
CALIBRATION REF:	13SSF006	13SSF006	13SSF006

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TSS	ND	56.7	53	93	56.7	52	92	2	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F106
METHOD : 160.2

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MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	IR12-062413-20	IR12-062413-20DUP
LAB SAMPLE ID :	F106-04	F106-04D
LAB FILE ID :	13SSF00604	13SSF00605
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/27/1311:43	06/27/1311:43
PREP BATCH :	SSF006W	SSF006W
CALIBRATION REF:	13SSF006	13SSF006

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
TSS	16	16	0	20

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/26/13 21:42
Sample ID: IR12-062513-TB1	Date Analyzed: 06/26/13 21:42
Lab Samp ID: F118-01	Dilution Factor: 1
Lab File ID: EF26019A	Matrix : WATER
Ext Btch ID: VG39F06	% Moisture : NA
Calib. Ref.: EF26012A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.7	40.00	84.3	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/26/13 22:21
Sample ID:	IR12-062513-22	Date Analyzed:	06/26/13 22:21
Lab Samp ID:	F118-02	Dilution Factor:	1
Lab File ID:	EF26020A	Matrix :	WATER
Ext Btch ID:	VG39F06	% Moisture :	NA
Calib. Ref.:	EF26012A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.5	40.00	86.4	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/26/13 23:00
Sample ID:	IR12-062513-23	Date Analyzed:	06/26/13 23:00
Lab Samp ID:	F118-04	Dilution Factor:	1
Lab File ID:	EF26021A	Matrix :	WATER
Ext Btch ID:	VG39F06	% Moisture :	NA
Calib. Ref.:	EF26012A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.1	40.00	82.8	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/26/13 23:39
Sample ID:	IR12-062513-05	Date Analyzed:	06/26/13 23:39
Lab Samp ID:	F118-06	Dilution Factor:	1
Lab File ID:	EF26022A	Matrix :	WATER
Ext Btch ID:	VG39F06	% Moisture :	NA
Calib. Ref.:	EF26012A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	12J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.6	40.00	86.5	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/27/13 00:18
Sample ID:	IR12-062513-05D	Date Analyzed:	06/27/13 00:18
Lab Samp ID:	F118-08	Dilution Factor:	1
Lab File ID:	EF26023A	Matrix	: WATER
Ext Btch ID:	VG39F06	% Moisture	: NA
Calib. Ref.:	EF26012A	Instrument ID	: GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	11J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	35.8	40.00	89.4	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/26/13 13:17
Sample ID:	MBLK1W	Date Analyzed:	06/26/13 13:17
Lab Samp ID:	VG39F06B	Dilution Factor:	1
Lab File ID:	EF26006A	Matrix :	WATER
Ext Btch ID:	VG39F06	% Moisture :	NA
Calib. Ref.:	EF26003A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.5	40.00	86.2	70-130

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39F06B	VG39F06L	VG39F06C		
LAB FILE ID:	EF26006A	EF26004A	EF26005A		
DATE EXTRACTED:	06/26/1313:17	06/26/1311:55	06/26/1312:34	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1313:17	06/26/1311:55	06/26/1312:34	DATE RECEIVED:	06/26/13
PREP. BATCH:	VG39F06	VG39F06	VG39F06		
CALIB. REF:	EF26003A	EF26003A	EF26003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	464	93	500	491	98	6	60-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	39.2	98	40.0	40.1	100	70-130

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062513-22	Date Analyzed: 07/01/13 15:18
Lab Samp ID: F118-02	Dilution Factor: 1
Lab File ID: LG01013A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	390	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	734	1000	73.4	50-130
HEXACOSANE	244	250.0	97.4	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062513-23	Date Analyzed: 07/01/13 15:35
Lab Samp ID: F118-04	Dilution Factor: 1.08
Lab File ID: LG01014A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	530	110	54
MOTOR OIL	ND	540	54

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	852	1080	78.9	50-130
HEXACOSANE	260	270.0	96.2	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062513-05	Date Analyzed: 07/01/13 16:26
Lab Samp ID: F118-06	Dilution Factor: 1.03
Lab File ID: LG01017A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	670	100	51
MOTOR OIL	ND	520	51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	689	1030	66.9	50-130
HEXACOSANE	230	257.5	89.3	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062513-05D	Date Analyzed: 07/01/13 16:43
Lab Samp ID: F118-08	Dilution Factor: 1.12
Lab File ID: LG01018A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	720	110	56
MOTOR OIL	ND	560	56

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	775	1120	69.2	50-130
HEXACOSANE	250	280.0	89.2	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F118	Date Extracted: 06/27/13 14:00
Sample ID: MBLK1W	Date Analyzed: 07/01/13 13:02
Lab Samp ID: DSF019WB	Dilution Factor: 1
Lab File ID: LG01005A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	824	1000	82.4	50-140
HEXACOSANE	230	250.0	92.0	70-150

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSF019WB	DSF019WL	DSF019WC		
LAB FILE ID:	LG01005A	LG01006A	LG01007A		
DATE EXTRACTED:	06/27/1314:00	06/27/1314:00	06/27/1314:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/01/1313:02	07/01/1313:19	07/01/1313:36	DATE RECEIVED:	06/27/13
PREP. BATCH:	DSF019W	DSF019W	DSF019W		
CALIB. REF:	LG01003A	LG01003A	LG01003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4270	85	5000	4130	83	3	70-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	927	93	1000	910	91	50-140
Hexacosane	250	243	97	250	239	96	70-150

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
Batch No.	: 13F118	Date Extracted:	06/27/13 13:30
Sample ID:	IR12-062513-22	Date Analyzed:	06/27/13 17:08 # 06/27/13 18:23
Lab Samp ID:	F118-02 #F118-02I	Dilution Factor:	1 # 100
Lab File ID:	FF27044A #FF27053A	Matrix	: WATER
Ext Btch ID:	DGF011W	% Moisture	: NA
Calib. Ref.:	FF27038A #FF27048A	Instrument ID	: GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	2100	500	34

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-22	Date Analyzed: 06/27/13 17:08
Lab Samp ID: F118-02	Dilution Factor: 1
Lab File ID: FF27044A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	210E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-22DL	Date Analyzed: 06/27/13 18:23
Lab Samp ID: F118-02I	Dilution Factor: 100
Lab File ID: FF27053A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	500	64
ETHENE	ND	500	60
METHANE	2100	500	34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-23	Date Analyzed: 06/27/13 17:17 # 06/27/13 17:57
Lab Samp ID: F118-04 #F118-04I	Dilution Factor: 1 # 200
Lab File ID: FF27045A #FF27050A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A #FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.1J	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	6100	1000	68

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-23	Date Analyzed: 06/27/13 17:17
Lab Samp ID: F118-04	Dilution Factor: 1
Lab File ID: FF27045A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	2.1J	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	97E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-23DL	Date Analyzed: 06/27/13 17:57
Lab Samp ID: F118-04I	Dilution Factor: 200
Lab File ID: FF27050A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	1000	130
ETHENE	ND	1000	120
METHANE	6100	1000	68

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05	Date Analyzed: 06/27/13 17:25 # 06/27/13 18:06
Lab Samp ID: F118-06 #F118-06I	Dilution Factor: 1 # 400
Lab File ID: FF27046A #FF27051A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A #FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.2J	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	8400	2000	140

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05	Date Analyzed: 06/27/13 17:25
Lab Samp ID: F118-06	Dilution Factor: 1
Lab File ID: FF27046A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.2J	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	120E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05DL	Date Analyzed: 06/27/13 18:06
Lab Samp ID: F118-06I	Dilution Factor: 400
Lab File ID: FF27051A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2000	260
ETHENE	ND	2000	240
METHANE	8400	2000	140

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05D	Date Analyzed: 06/27/13 17:36 # 06/27/13 18:15
Lab Samp ID: F118-08 #F118-08I	Dilution Factor: 1 # 400
Lab File ID: FF27047A #FF27052A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A #FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.1J	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	8800	2000	140

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05D	Date Analyzed: 06/27/13 17:36
Lab Samp ID: F118-08	Dilution Factor: 1
Lab File ID: FF27047A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27038A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	1.1J	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	120E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 06/25/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/26/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: IR12-062513-05DDL	Date Analyzed: 06/27/13 18:15
Lab Samp ID: F118-08I	Dilution Factor: 400
Lab File ID: FF27052A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27048A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2000	260
ETHENE	ND	2000	240
METHANE	8800	2000	140

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F118	Date Extracted: 06/27/13 13:30
Sample ID: MBLK1W	Date Analyzed: 06/27/13 15:13
Lab Samp ID: DGF011WB	Dilution Factor: 1
Lab File ID: FF27032A	Matrix : WATER
Ext Btch ID: DGF011W	% Moisture : NA
Calib. Ref.: FF27026A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF011WB	DGF011WL	DGF011WC		
LAB FILE ID:	FF27032A	FF27033A	FF27034A		
DATE EXTRACTED:	06/27/1313:30	06/27/1313:30	06/27/1313:30	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1315:13	06/27/1315:23	06/27/1315:32	DATE RECEIVED:	06/27/13
PREP. BATCH:	DGF011W	DGF011W	DGF011W		
CALIB. REF:	FF27026A	FF27026A	FF27026A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	23.2	92	25.4	22.9	90	1	70-140	30
Ethene	ND	23.7	22.0	93	23.7	21.6	91	2	70-140	30
Methane	ND	13.6	12.2	90	13.6	11.8	87	3	70-130	30

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-22T	Date Analyzed:	06/27/13 14:27
Lab Samp ID:	F118-03	Dilution Factor:	1
Lab File ID:	98F08026	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08016	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	59.3J	100	20.0
Antimony	0.530J	1.00	0.500
Arsenic	31.3	1.00	0.200
Barium	49.5	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	158000	1000	25.0
Chromium	0.260J	1.00	0.200
Cobalt	0.244J	1.00	0.200
Copper	1.79	1.00	0.500
Iron	4770	1000	10.0
Lead	0.162J	1.00	0.100
Magnesium	20600	1000	10.0
Manganese	540	1.00	0.200
Molybdenum	0.646J	2.00	0.500
Nickel	1.12	1.00	0.500
Potassium	12400	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	78000	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	0.566J	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-23T	Date Analyzed:	06/27/13 14:44
Lab Samp ID:	F118-05	Dilution Factor:	1
Lab File ID:	98F08030	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	96.1	1.00	0.200
Barium	71.4	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	117000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	7520	1000	10.0
Lead	ND	1.00	0.100
Magnesium	21100	1000	10.0
Manganese	1660	1.00	0.200
Molybdenum	0.692J	2.00	0.500
Nickel	0.647J	1.00	0.500
Potassium	16300	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	49700	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	14.2J	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-05T	Date Analyzed:	06/27/13 14:49
Lab Samp ID:	F118-07	Dilution Factor:	1
Lab File ID:	98F08031	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	132	1.00	0.200
Barium	19.0	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	78000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	9730	1000	10.0
Lead	ND	1.00	0.100
Magnesium	16400	1000	10.0
Manganese	983	1.00	0.200
Molybdenum	1.20J	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	16400	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	30200	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-05TD	Date Analyzed:	06/27/13 14:18
Lab Samp ID:	F118-09	Dilution Factor:	1
Lab File ID:	98F08024	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08016	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	133	1.00	0.200
Barium	19.0	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	77300	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	9610	1000	10.0
Lead	ND	1.00	0.100
Magnesium	16300	1000	10.0
Manganese	989	1.00	0.200
Molybdenum	1.23J	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	16400	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	29700	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	MBLK1W	Date Analyzed:	06/27/13 13:52
Lab Samp ID:	IMF023WB	Dilution Factor:	1
Lab File ID:	98F08018	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08016	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMF023WB	IMF023WL	IMF023WC		
LAB FILE ID:	98F08018	98F08019	98F08020		
DATIME EXTRCTD:	06/26/1313:12	06/26/1313:12	06/26/1313:12	DATE COLLECTED:	NA
DATIME ANALYZD:	06/27/1313:52	06/27/1313:56	06/27/1314:01	DATE RECEIVED:	06/26/13
PREP. BATCH:	IMF023W	IMF023W	IMF023W		
CALIB. REF:	98F08016	98F08016	98F08016		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2680	107	2500	2650	106	1	80-120	20
Antimony	ND	25.0	25.7	103	25.0	25.5	102	1	80-120	20
Arsenic	ND	25.0	25.7	103	25.0	25.3	101	2	80-120	20
Barium	ND	25.0	25.9	104	25.0	25.5	102	1	80-120	20
Beryllium	ND	25.0	25.0	100	25.0	24.6	98	2	80-120	20
Cadmium	ND	25.0	25.1	100	25.0	25.0	100	0	80-120	20
Calcium	ND	2500	2740	109	2500	2770	111	1	80-120	20
Chromium	ND	25.0	25.4	102	25.0	25.2	101	1	80-120	20
Cobalt	ND	25.0	25.3	101	25.0	25.1	100	1	80-120	20
Copper	ND	25.0	26.0	104	25.0	25.7	103	1	80-120	20
Iron	ND	2500	2640	105	2500	2670	107	1	80-120	20
Lead	ND	25.0	26.4	106	25.0	25.9	104	2	80-120	20
Magnesium	ND	2500	2680	107	2500	2670	107	1	80-120	20
Manganese	ND	25.0	24.9	100	25.0	24.4	98	2	80-120	20
Molybdenum	ND	25.0	24.6	99	25.0	24.4	98	1	80-120	20
Nickel	ND	25.0	25.7	103	25.0	25.5	102	1	80-120	20
Potassium	ND	2500	2620	105	2500	2610	104	0	80-120	20
Selenium	ND	25.0	25.8	103	25.0	25.7	103	1	80-120	20
Silver	ND	25.0	25.5	102	25.0	25.2	101	1	80-120	20
Sodium	ND	2500	2680	107	2500	2760	110	3	80-120	20
Thallium	ND	25.0	25.9	104	25.0	25.4	101	2	80-120	20
Vanadium	ND	25.0	25.1	100	25.0	24.8	99	1	80-120	20
Zinc	ND	50.0	53.3	107	50.0	52.2	104	2	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	IR12-062513-05TD				
CONTROL NO.:	F118-09	F118-09M	F118-09S		
LAB FILE ID:	98F08024	98F08021	98F08022		
DATIME EXTRCTD:	06/26/1313:12	06/26/1313:12	06/26/1313:12	DATE COLLECTED:	06/25/13
DATIME ANALYZD:	06/27/1314:18	06/27/1314:05	06/27/1314:09	DATE RECEIVED:	06/26/13
PREP. BATCH:	IMF023W	IMF023W	IMF023W		
CALIB. REF:	98F08016	98F08016	98F08016		

ACCESSION:

PARAMETER	SMPL RSLT ug/L	SPIKE AMT ug/L	MS RSLT ug/L	MS % REC	SPIKE AMT ug/L	MSD RSLT ug/L	MSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2490	100	2500	2470	99	1	75-125	20
Antimony	ND	25.0	26.1	105	25.0	25.7	103	2	75-125	20
Arsenic	133	25.0	161	113	25.0	160	109	1	75-125	20
Barium	19.0	25.0	45.1	104	25.0	44.7	103	1	75-125	20
Beryllium	ND	25.0	25.4	102	25.0	25.1	101	1	75-125	20
Cadmium	ND	25.0	25.2	101	25.0	24.9	100	1	75-125	20
Calcium	77300	2500	81500	170*	2500	81500	169*	0	75-125	20
Chromium	ND	25.0	25.2	101	25.0	25.0	100	1	75-125	20
Cobalt	ND	25.0	24.0	96	25.0	23.9	96	0	75-125	20
Copper	ND	25.0	24.8	99	25.0	24.6	98	1	75-125	20
Iron	9610	2500	12400	112	2500	12400	112	0	75-125	20
Lead	ND	25.0	25.1	101	25.0	25.0	100	0	75-125	20
Magnesium	16300	2500	18700	98	2500	18800	99	0	75-125	20
Manganese	989	25.0	1040	209*	25.0	1040	189*	0	75-125	20
Molybdenum	1.23J	25.0	26.7	102	25.0	26.3	100	2	75-125	20
Nickel	ND	25.0	24.9	99	25.0	24.6	99	1	75-125	20
Potassium	16400	2500	19200	113	2500	19100	108	1	75-125	20
Selenium	ND	25.0	25.6	102	25.0	26.1	104	2	75-125	20
Silver	ND	25.0	24.8	99	25.0	24.5	98	1	75-125	20
Sodium	29700	2500	33100	136*	2500	32900	129*	1	75-125	20
Thallium	ND	25.0	24.8	99	25.0	24.8	99	0	75-125	20
Vanadium	ND	25.0	25.6	103	25.0	25.3	101	1	75-125	20
Zinc	ND	50.0	56.1	112	50.0	54.8	110	2	75-125	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 6020A

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MATRIX: WATER % MOISTURE: NA
DILTN FACTR: 1 1
SAMPLE ID: IR12-062513-05TD
CONTROL NO.: F118-09 F118-09A
LAB FILE ID: 98F08024 98F08023
DATIME EXTRCTD: 06/26/1313:12 06/26/1313:12 DATE COLLECTED: 06/25/13
DATIME ANALYZD: 06/27/1314:18 06/27/1314:14 DATE RECEIVED: 06/26/13
PREP. BATCH: IMF023W IMF023W
CALIB. REF: 98F08016 98F08016

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Aluminum	ND	2500	2630	105	80-120
Antimony	ND	25.0	26.5	106	80-120
Arsenic	133	25.0	158	102	80-120
Barium	19.0	25.0	45.0	104	80-120
Beryllium	ND	25.0	26.4	105	80-120
Cadmium	ND	25.0	25.6	102	80-120
Calcium	77300	2500	79500	89	80-120
Chromium	ND	25.0	25.6	102	80-120
Cobalt	ND	25.0	24.4	98	80-120
Copper	ND	25.0	25.3	101	80-120
Iron	9610	2500	12300	106	80-120
Lead	ND	25.0	25.8	103	80-120
Magnesium	16300	2500	18600	91	80-120
Manganese	989	25.0	1010	101	80-120
Molybdenum	1.23J	25.0	26.9	103	80-120
Nickel	ND	25.0	25.3	101	80-120
Potassium	16400	2500	18900	100	80-120
Selenium	ND	25.0	26.4	106	80-120
Silver	ND	25.0	24.0	96	80-120
Sodium	29700	2500	32100	98	80-120
Thallium	ND	25.0	25.6	102	80-120
Vanadium	ND	25.0	25.9	104	80-120
Zinc	ND	50.0	57.7	115	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 6020A

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 5
SAMPLE ID: IR12-062513-05 IR12-062513-05
EMAX SAMP ID: F118-09 F118-09J
LAB FILE ID: 98F08024 98F08025
DATE EXTRACTED: 06/26/1313:12 06/26/1313:12 DATE COLLECTED: 06/25/13
DATE ANALYZED: 06/27/1314:18 06/27/1314:22 DATE RECEIVED: 06/26/13
PREP. BATCH: IMF023W IMF023W
CALIB. REF: 98F08016 98F08016

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Aluminum	ND	ND	0	10
Antimony	ND	ND	0	10
Arsenic	133	133	0	10
Barium	19.0	19.5	3	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Calcium	77300	80900	5	10
Chromium	ND	ND	0	10
Cobalt	ND	ND	0	10
Copper	ND	ND	0	10
Iron	9610	10300	7	10
Lead	ND	ND	0	10
Magnesium	16300	18000	10	10
Manganese	989	1060	7	10
Molybdenum	1.23J	ND	NA	10
Nickel	ND	ND	0	10
Potassium	16400	17200	5	10
Selenium	ND	ND	0	10
Silver	ND	ND	0	10
Sodium	29700	32000	8	10
Thallium	ND	ND	0	10
Vanadium	ND	ND	0	10
Zinc	ND	ND	0	10

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-22	Date Analyzed:	06/27/13 14:53
Lab Samp ID:	F118-02	Dilution Factor:	1
Lab File ID:	98F08032	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	0.519J	1.00	0.500
Arsenic	28.0	1.00	0.200
Barium	46.5	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	154000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.225J	1.00	0.200
Copper	ND	1.00	0.500
Iron	4300	1000	10.0
Lead	ND	1.00	0.100
Magnesium	20000	1000	10.0
Manganese	513	1.00	0.200
Molybdenum	0.610J	2.00	0.500
Nickel	0.919J	1.00	0.500
Potassium	12000	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	76000	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-23	Date Analyzed:	06/27/13 14:57
Lab Samp ID:	F118-04	Dilution Factor:	1
Lab File ID:	98F08033	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	93.2	1.00	0.200
Barium	69.3	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	115000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	7490	1000	10.0
Lead	0.349J	1.00	0.100
Magnesium	21000	1000	10.0
Manganese	1640	1.00	0.200
Molybdenum	0.666J	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	16000	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	48700	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-05	Date Analyzed:	06/27/13 15:02
Lab Samp ID:	F118-06	Dilution Factor:	1
Lab File ID:	98F08034	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	21.3J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	131	1.00	0.200
Barium	18.4	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	78500	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	0.646J	1.00	0.500
Iron	9400	1000	10.0
Lead	ND	1.00	0.100
Magnesium	16700	1000	10.0
Manganese	979	1.00	0.200
Molybdenum	1.22J	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	16700	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	31200	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	15.3J	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/25/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	IR12-062513-05D	Date Analyzed:	06/27/13 15:06
Lab Samp ID:	F118-08	Dilution Factor:	1
Lab File ID:	98F08035	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08028	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	132	1.00	0.200
Barium	17.7	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	78000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	9360	1000	10.0
Lead	ND	1.00	0.100
Magnesium	16700	1000	10.0
Manganese	981	1.00	0.200
Molybdenum	1.22J	2.00	0.500
Nickel	0.940J	1.00	0.500
Potassium	16700	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	30300	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/26/13
SDG NO.	: 13F118	Date Extracted:	06/26/13 13:12
Sample ID:	MBLK1W	Date Analyzed:	06/27/13 13:52
Lab Samp ID:	IMF023WB	Dilution Factor:	1
Lab File ID:	98F08018	Matrix :	WATER
Ext Btch ID:	IMF023W	% Moisture :	NA
Calib. Ref.:	98F08016	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMF023WB	IMF023WL	IMF023WC		
LAB FILE ID:	98F08018	98F08019	98F08020		
DATIME EXTRCTD:	06/26/1313:12	06/26/1313:12	06/26/1313:12	DATE COLLECTED:	NA
DATIME ANALYZD:	06/27/1313:52	06/27/1313:56	06/27/1314:01	DATE RECEIVED:	06/26/13
PREP. BATCH:	IMF023W	IMF023W	IMF023W		
CALIB. REF:	98F08016	98F08016	98F08016		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2680	107	2500	2650	106	1	80-120	20
Antimony	ND	25.0	25.7	103	25.0	25.5	102	1	80-120	20
Arsenic	ND	25.0	25.7	103	25.0	25.3	101	2	80-120	20
Barium	ND	25.0	25.9	104	25.0	25.5	102	1	80-120	20
Beryllium	ND	25.0	25.0	100	25.0	24.6	98	2	80-120	20
Cadmium	ND	25.0	25.1	100	25.0	25.0	100	0	80-120	20
Calcium	ND	2500	2740	109	2500	2770	111	1	80-120	20
Chromium	ND	25.0	25.4	102	25.0	25.2	101	1	80-120	20
Cobalt	ND	25.0	25.3	101	25.0	25.1	100	1	80-120	20
Copper	ND	25.0	26.0	104	25.0	25.7	103	1	80-120	20
Iron	ND	2500	2640	105	2500	2670	107	1	80-120	20
Lead	ND	25.0	26.4	106	25.0	25.9	104	2	80-120	20
Magnesium	ND	2500	2680	107	2500	2670	107	1	80-120	20
Manganese	ND	25.0	24.9	100	25.0	24.4	98	2	80-120	20
Molybdenum	ND	25.0	24.6	99	25.0	24.4	98	1	80-120	20
Nickel	ND	25.0	25.7	103	25.0	25.5	102	1	80-120	20
Potassium	ND	2500	2620	105	2500	2610	104	0	80-120	20
Selenium	ND	25.0	25.8	103	25.0	25.7	103	1	80-120	20
Silver	ND	25.0	25.5	102	25.0	25.2	101	1	80-120	20
Sodium	ND	2500	2680	107	2500	2760	110	3	80-120	20
Thallium	ND	25.0	25.9	104	25.0	25.4	101	2	80-120	20
Vanadium	ND	25.0	25.1	100	25.0	24.8	99	1	80-120	20
Zinc	ND	50.0	53.3	107	50.0	52.2	104	2	80-120	20

METHOD 7470A
MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
Instrument ID : 47

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062513-22T	F118-03	ND	1	NA	0.200	0.100	07/03/1316:29	07/03/1311:30	M47G002027	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-23T	F118-05	ND	1	NA	0.200	0.100	07/03/1316:33	07/03/1311:30	M47G002029	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-05T	F118-07	ND	1	NA	0.200	0.100	07/03/1316:37	07/03/1311:30	M47G002031	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-05TD	F118-09	ND	1	NA	0.200	0.100	07/03/1316:46	07/03/1311:30	M47G002035	M47G002033	HGG003W	06/25/13	06/26/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

METHOD 7470A
DISSOLVED MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
Instrument ID : TI047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062513-22	F118-02	ND	1	NA	0.200	0.100	07/03/1316:26	07/03/1311:30	M47G002026	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-23	F118-04	ND	1	NA	0.200	0.100	07/03/1316:31	07/03/1311:30	M47G002028	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-05	F118-06	ND	1	NA	0.200	0.100	07/03/1316:35	07/03/1311:30	M47G002030	M47G002021	HGG003W	06/25/13	06/26/13
IR12-062513-05D	F118-08	ND	1	NA	0.200	0.100	07/03/1316:39	07/03/1311:30	M47G002032	M47G002021	HGG003W	06/25/13	06/26/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F118
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

METHOD 300.0
CHLORIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICF033WB	ND	1	NA	0.200	0.100	06/26/1310:45	NA	AF27-03	AF27-01	ICF033W	NA	NA
LCS1W	ICF033WL	2.08	1	NA	0.200	0.100	06/26/1311:02	NA	AF27-04	AF27-01	ICF033W	NA	NA
LCD1W	ICF033WC	2.09	1	NA	0.200	0.100	06/26/1311:18	NA	AF27-05	AF27-01	ICF033W	NA	NA
IR12-062513-22	F118-02J	263	40	NA	8.00	4.00	06/26/1319:24	NA	AF27-34	AF27-25	ICF033W	06/25/1307:45	06/26/13
MBLK2W	ICF035WB	ND	1	NA	0.200	0.100	06/26/1320:29	NA	AF27-38	AF27-36	ICF035W	NA	NA
LCS2W	ICF035WL	2.07	1	NA	0.200	0.100	06/26/1320:45	NA	AF27-39	AF27-36	ICF035W	NA	NA
LCD2W	ICF035WC	2.08	1	NA	0.200	0.100	06/26/1321:01	NA	AF27-40	AF27-36	ICF035W	NA	NA
IR12-062513-23	F118-04I	71.9	10	NA	2.00	1.00	06/26/1322:06	NA	AF27-44	AF27-36	ICF035W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06I	29.0	5	NA	1.00	0.500	06/26/1322:22	NA	AF27-45	AF27-36	ICF035W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08I	28.5	5	NA	1.00	0.500	06/26/1322:38	NA	AF27-46	AF27-36	ICF035W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICF033WB	ICF033WL	ICF033WC		
LAB FILE ID:	AF27-03	AF27-04	AF27-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1310:45	06/26/1311:02	06/26/1311:18	DATE RECEIVED:	NA
PREP. BATCH:	ICF033W	ICF033W	ICF033W		
CALIB. REF:	AF27-01	AF27-01	AF27-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	2.08	104	2	2.09	104	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICF035WB	ICF035WL	ICF035WC		
LAB FILE ID:	AF27-38	AF27-39	AF27-40		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1320:29	06/26/1320:45	06/26/1321:01	DATE RECEIVED:	NA
PREP. BATCH:	ICF035W	ICF035W	ICF035W		
CALIB. REF:	AF27-36	AF27-36	AF27-36		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	2.07	103	2	2.08	104	0	90-110	20

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICF033WB	ND	1	NA	0.500	0.200	06/26/1310:45	NA	AF27-03	AF27-01	ICF033W	NA	NA
LCS1W	ICF033WL	5.10	1	NA	0.500	0.200	06/26/1311:02	NA	AF27-04	AF27-01	ICF033W	NA	NA
LCD1W	ICF033WC	5.13	1	NA	0.500	0.200	06/26/1311:18	NA	AF27-05	AF27-01	ICF033W	NA	NA
IR12-062513-22	F118-02I	17.1	5	NA	2.50	1.00	06/26/1319:08	NA	AF27-33	AF27-25	ICF033W	06/25/1307:45	06/26/13
MBLK2W	ICF035WB	ND	1	NA	0.500	0.200	06/26/1320:29	NA	AF27-38	AF27-36	ICF035W	NA	NA
LCS2W	ICF035WL	5.10	1	NA	0.500	0.200	06/26/1320:45	NA	AF27-39	AF27-36	ICF035W	NA	NA
LCD2W	ICF035WC	5.12	1	NA	0.500	0.200	06/26/1321:01	NA	AF27-40	AF27-36	ICF035W	NA	NA
IR12-062513-23	F118-04	1.19	1	NA	0.500	0.200	06/26/1321:18	NA	AF27-41	AF27-36	ICF035W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06	0.504	1	NA	0.500	0.200	06/26/1321:34	NA	AF27-42	AF27-36	ICF035W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08	0.282J	1	NA	0.500	0.200	06/26/1321:50	NA	AF27-43	AF27-36	ICF035W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICF033WB	ICF033WL	ICF033WC		
LAB FILE ID:	AF27-03	AF27-04	AF27-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1310:45	06/26/1311:02	06/26/1311:18	DATE RECEIVED:	NA
PREP. BATCH:	ICF033W	ICF033W	ICF033W		
CALIB. REF:	AF27-01	AF27-01	AF27-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	5.1	102	5	5.13	103	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F118
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICF035WB	ICF035WL	ICF035WC		
LAB FILE ID:	AF27-38	AF27-39	AF27-40		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	06/26/1320:29	06/26/1320:45	06/26/1321:01	DATE RECEIVED:	NA
PREP. BATCH:	ICF035W	ICF035W	ICF035W		
CALIB. REF:	AF27-36	AF27-36	AF27-36		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	5.1	102	5	5.12	102	0	90-110	20

METHOD 376.1
SULFIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
InstrumentID : NA

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SDF001WB	ND	1	NA	1	1	06/27/1312:52	NA	13SDF00101	13SDF001	SDF001W	NA	NA
LCS1W	SDF001WL	2.13	1	NA	1	1	06/27/1313:00	NA	13SDF00102	13SDF001	SDF001W	NA	NA
LCD1W	SDF001WC	2.17	1	NA	1	1	06/27/1313:05	NA	13SDF00103	13SDF001	SDF001W	NA	NA
IR12-062513-22	F118-02	ND	1	NA	1	1	06/27/1313:19	NA	13SDF00106	13SDF001	SDF001W	06/25/1307:45	06/26/13
IR12-062513-22DUP	F118-02D	ND	1	NA	1	1	06/27/1313:25	NA	13SDF00107	13SDF001	SDF001W	06/25/1307:45	06/26/13
IR12-062513-23	F118-04	ND	1	NA	1	1	06/27/1313:28	NA	13SDF00108	13SDF001	SDF001W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06	ND	1	NA	1	1	06/27/1313:32	NA	13SDF00109	13SDF001	SDF001W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08	ND	1	NA	1	1	06/27/1313:37	NA	13SDF00110	13SDF001	SDF001W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F118
METHOD : METHOD 376.1

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SDF001WB	SDF001WL	SDF001WC
LAB FILE ID :	13SDF00101	13SDF00102	13SDF00103
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/27/1312:52	06/27/1313:00	06/27/1313:05
PREP BATCH :	SDF001W	SDF001W	SDF001W
CALIBRATION REF:	13SDF001	13SDF001	13SDF001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
SULFIDE	ND	2	2.13	107	2	2.17	109	2	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F118
METHOD : METHOD 376.1

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MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	IR12-062513-22	IR12-062513-22DUP
LAB SAMPLE ID :	F118-02	F118-02D
LAB FILE ID :	13SDF00106	13SDF00107
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/27/1313:19	06/27/1313:25
PREP BATCH :	SDF001W	SDF001W
CALIBRATION REF:	13SDF001	13SDF001

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
SULFIDE	ND	ND	0	20

METHOD 353.3
NITRATE-N

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG001WB	ND	1	NA	0.1	0.02	07/05/1315:11	NA	13NAG00110	13NAG001	NAG001W	NA	NA
LCS1W	NAG001WL	0.515	1	NA	0.1	0.02	07/05/1315:12	NA	13NAG00111	13NAG001	NAG001W	NA	NA
LCD1W	NAG001WC	0.510	1	NA	0.1	0.02	07/05/1315:12	NA	13NAG00112	13NAG001	NAG001W	NA	NA
IR12-062513-22	F118-02	ND	1	NA	0.1	0.02	07/05/1315:35	NA	13NAG00122	13NAG001	NAG001W	06/25/1307:45	06/26/13
IR12-062513-23	F118-04	ND	1	NA	0.1	0.02	07/05/1315:35	NA	13NAG00123	13NAG001	NAG001W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06	ND	1	NA	0.1	0.02	07/05/1315:36	NA	13NAG00124	13NAG001	NAG001W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08	ND	1	NA	0.1	0.02	07/05/1315:36	NA	13NAG00125	13NAG001	NAG001W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F118
METHOD : 353.3

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	NAG001WB	NAG001WL	NAG001WC
LAB FILE ID :	13NAG00110	13NAG00111	13NAG00112
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	07/05/1315:11	07/05/1315:12	07/05/1315:12
PREP BATCH :	NAG001W	NAG001W	NAG001W
CALIBRATION REF:	13NAG001	13NAG001	13NAG001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
NITRATE-N	ND	0.5	0.515	103	0.5	0.510	102	1	80-120	20

METHOD 160.2
TOTAL SUSPENDED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118
Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SSF006WB	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00601	13SSF006	SSF006W	NA	NA
LCS1W	SSF006WL	53	1	NA	10	10	06/27/1311:43	NA	13SSF00602	13SSF006	SSF006W	NA	NA
LCD1W	SSF006WC	52	1	NA	10	10	06/27/1311:43	NA	13SSF00603	13SSF006	SSF006W	NA	NA
IR12-062513-22	F118-02	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00606	13SSF006	SSF006W	06/25/1307:45	06/26/13
IR12-062513-23	F118-04	14	1	NA	10	10	06/27/1311:43	NA	13SSF00607	13SSF006	SSF006W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06	16	1	NA	10	10	06/27/1311:43	NA	13SSF00608	13SSF006	SSF006W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08	16	1	NA	10	10	06/27/1311:43	NA	13SSF00609	13SSF006	SSF006W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F118
METHOD : 160.2

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SSF006WB	SSF006WL	SSF006WC
LAB FILE ID :	13SSF00601	13SSF00602	13SSF00603
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/27/1311:43	06/27/1311:43	06/27/1311:43
PREP BATCH :	SSF006W	SSF006W	SSF006W
CALIBRATION REF:	13SSF006	13SSF006	13SSF006

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TSS	ND	56.7	53	93	56.7	52	92	2	80-120	20

METHOD 160.1
TOTAL DISSOLVED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F118

Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDG001WB	ND	1	NA	10	10	07/01/1317:12	NA	13TDG00101	13TDG001	TDG001W	NA	NA
LCS1W	TDG001WL	1000	1	NA	10	10	07/01/1317:12	NA	13TDG00102	13TDG001	TDG001W	NA	NA
LCD1W	TDG001WC	1030	1	NA	10	10	07/01/1317:12	NA	13TDG00103	13TDG001	TDG001W	NA	NA
IR12-062513-22	F118-02	820	1	NA	10	10	07/01/1317:12	NA	13TDG00105	13TDG001	TDG001W	06/25/1307:45	06/26/13
IR12-062513-23	F118-04	564	1	NA	10	10	07/01/1317:12	NA	13TDG00106	13TDG001	TDG001W	06/25/1307:50	06/26/13
IR12-062513-05	F118-06	432	1	NA	10	10	07/01/1317:12	NA	13TDG00107	13TDG001	TDG001W	06/25/1307:50	06/26/13
IR12-062513-05D	F118-08	420	1	NA	10	10	07/01/1317:12	NA	13TDG00108	13TDG001	TDG001W	06/25/1307:55	06/26/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F118
METHOD : 160.1

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	TDG001WB	TDG001WL	TDG001WC
LAB FILE ID :	13TDG00101	13TDG00102	13TDG00103
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	07/01/1317:12	07/01/1317:12	07/01/1317:12
PREP BATCH :	TDG001W	TDG001W	TDG001W
CALIBRATION REF:	13TDG001	13TDG001	13TDG001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TDS	ND	1000	1000	100	1000	1030	103	3	80-120	20

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/01/13 21:15
Sample ID: IR12-062613-TB1	Date Analyzed: 07/01/13 21:15
Lab Samp ID: F131-01	Dilution Factor: 1
Lab File ID: RGQ015	Matrix : WATER
Ext Btch ID: VO05G01	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.94	10.00	89.4	70-140
4-BROMOFLUOROBENZENE	9.81	10.00	98.1	70-130
TOLUENE-D8	9.14	10.00	91.4	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/01/13 22:52
Sample ID: IR12-062613-28	Date Analyzed: 07/01/13 22:52
Lab Samp ID: F131-02	Dilution Factor: 1
Lab File ID: RGQ018	Matrix : WATER
Ext Btch ID: VO05G01	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	1.7	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	0.77	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	1.3	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.91	10.00	99.1	70-140
4-BROMOFLUOROBENZENE	10.1	10.00	101	70-130
TOLUENE-D8	9.53	10.00	95.3	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/02/13 11:16
Sample ID: IR12-062613-29	Date Analyzed: 07/02/13 11:16
Lab Samp ID: F131-04R	Dilution Factor: 1
Lab File ID: RGQ040	Matrix : WATER
Ext Btch ID: VO05G02	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.22	10.00	92.2	70-140
4-BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.42	10.00	94.2	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/02/13 11:47
Sample ID: IR12-062613-30	Date Analyzed: 07/02/13 11:47
Lab Samp ID: F131-06R	Dilution Factor: 1
Lab File ID: RGQ041	Matrix : WATER
Ext Btch ID: VO05G02	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	0.21J	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.47	10.00	94.7	70-140
4-BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.11	10.00	91.1	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/01/13 21:47
Sample ID: IR12-062613-SB	Date Analyzed: 07/01/13 21:47
Lab Samp ID: F131-08	Dilution Factor: 1
Lab File ID: RGQ016	Matrix : WATER
Ext Btch ID: VO05G01	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.98	10.00	89.8	70-140
4-BROMOFLUOROBENZENE	9.82	10.00	98.2	70-130
TOLUENE-D8	9.15	10.00	91.5	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 07/01/13 22:20
Sample ID: IR12-062613-ER	Date Analyzed: 07/01/13 22:20
Lab Samp ID: F131-10	Dilution Factor: 1
Lab File ID: RGQ017	Matrix : WATER
Ext Btch ID: VO05G01	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.33	10.00	93.3	70-140
4-BROMOFLUOROBENZENE	9.54	10.00	95.4	70-130
TOLUENE-D8	8.88	10.00	88.8	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 07/01/13
Batch No. : 13F131	Date Extracted: 07/01/13 16:54
Sample ID: MBLK1W	Date Analyzed: 07/01/13 16:54
Lab Samp ID: VO05G01B	Dilution Factor: 1
Lab File ID: RGQ007	Matrix : WATER
Ext Btch ID: VO05G01	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.56	10.00	85.6	70-140
4-BROMOFLUOROBENZENE	10.1	10.00	101	70-130
TOLUENE-D8	9.50	10.00	95.0	70-130

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 07/02/13
Batch No. : 13F131	Date Extracted: 07/02/13 10:09
Sample ID: MBLK2W	Date Analyzed: 07/02/13 10:09
Lab Samp ID: VO05G02B	Dilution Factor: 1
Lab File ID: RGQ038	Matrix : WATER
Ext Btch ID: VO05G02	% Moisture : NA
Calib. Ref.: RCQ458	Instrument ID : T-O05

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.39	10.00	93.9	70-140
4-BROMOFLUOROBENZENE	9.79	10.00	97.9	70-130
TOLUENE-D8	9.26	10.00	92.6	70-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F131
METHOD: METHOD 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO05G01B	VO05G01L	VO05G01Y		
LAB FILE ID:	RGQ007	RGQ003	RGQ005		
DATE EXTRACTED:	07/01/1316:54	07/01/1313:38	07/01/1315:50	DATE COLLECTED:	NA
DATE ANALYZED:	07/01/1316:54	07/01/1313:38	07/01/1315:50	DATE RECEIVED:	07/01/13
PREP. BATCH:	VO05G01	VO05G01	VO05G01		
CALIB. REF:	RCQ458	RCQ458	RCQ458		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.33	93	10.0	9.12	91	2	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	9.42	94	10.0	9.42	94	0	70-130	30
1,1,2-Trichloroethane	ND	10.0	10.4	104	10.0	9.77	98	6	70-130	30
1,1-Dichloroethane	ND	10.0	9.33	93	10.0	9.32	93	0	70-130	30
1,1-Dichloroethene	ND	10.0	8.75	88	10.0	8.76	88	0	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.2	102	10.0	9.42	94	8	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	10.3	103	10.0	10.5	105	2	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	8.55	86	10.0	8.46	85	1	60-130	30
1,2-Dichlorobenzene	ND	10.0	10.4	104	10.0	10.2	102	1	70-130	30
1,2-Dichloroethane	ND	10.0	9.18	92	10.0	8.76	88	5	70-130	30
1,2-Dichloropropane	ND	10.0	9.78	98	10.0	9.74	97	0	70-130	30
1,3-Dichlorobenzene	ND	10.0	10.1	101	10.0	10.3	103	3	70-130	30
1,4-Dichlorobenzene	ND	10.0	10.4	104	10.0	10.2	102	2	70-130	30
2-Butanone	ND	50.0	45.7	91	50.0	44.9	90	2	60-140	30
2-Hexanone	ND	50.0	49.7	99	50.0	44.4	89	11	70-140	30
4-Methyl-2-Pentanone	ND	50.0	46.5	93	50.0	44.2	88	5	60-140	30
Acetone	ND	50.0	44.4	89	50.0	45.6	91	3	50-150	30
Benzene	ND	10.0	9.82	98	10.0	9.33	93	5	70-130	30
Bromochloromethane	ND	10.0	9.96	100	10.0	9.53	95	4	70-130	30
Bromodichloromethane	ND	10.0	9.42	94	10.0	8.81	88	7	70-130	30
Bromoform	ND	10.0	8.87	89	10.0	8.80	88	1	60-140	30
Bromomethane	ND	10.0	8.69	87	10.0	9.36	94	7	50-140	30
Carbon Disulfide	ND	10.0	8.70	87	10.0	9.00	90	3	50-140	30
Carbon Tetrachloride	ND	10.0	9.07	91	10.0	8.99	90	1	70-130	30
Chlorobenzene	ND	10.0	10.5	105	10.0	10.1	101	4	70-130	30
Chloroethane	ND	10.0	9.50	95	10.0	10.1	101	6	70-140	30
Chloroform	ND	10.0	9.60	96	10.0	9.13	91	5	70-130	30
Chloromethane	ND	10.0	9.30	93	10.0	10.2	102	10	60-130	30
cis-1,2-Dichloroethene	ND	10.0	9.59	96	10.0	9.73	97	1	70-130	30
cis-1,3-Dichloropropene	ND	10.0	9.34	93	10.0	9.30	93	0	70-130	30
Dibromochloromethane	ND	10.0	9.82	98	10.0	9.14	91	7	70-130	30
Ethylbenzene	ND	10.0	9.73	97	10.0	10.1	101	4	70-130	30
Isopropyl Benzene	ND	10.0	9.33	93	10.0	9.66	97	3	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	10.3	103	10.0	9.43	94	9	70-140	30
Methylene Chloride	ND	10.0	9.47	95	10.0	9.28	93	2	70-130	30
Styrene	ND	10.0	10.3	103	10.0	10.0	100	2	70-130	30
Tetrachloroethene	ND	10.0	9.89	99	10.0	9.98	100	1	70-130	30
Toluene	ND	10.0	9.64	96	10.0	9.44	94	2	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	8.99	90	10.0	9.13	91	2	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	8.98	90	10.0	8.76	88	2	70-140	30
Trichloroethene	ND	10.0	9.73	97	10.0	9.69	97	0	70-130	30
Vinyl Acetate	ND	10.0	9.67	97	10.0	8.52	85	13	20-160	30
Vinyl Chloride	ND	10.0	9.10	91	10.0	9.08	91	0	60-150	30
m- and p-Xylene	ND	20.0	19.7	99	20.0	19.9	99	1	70-130	30
o-Xylene	ND	10.0	10.0	100	10.0	9.52	95	5	70-130	30
Xylenes (Total)	ND	30.0	29.8	99	30.0	29.4	98	1	70-130	30
Naphthalene	ND	10.0	8.75	88	10.0	8.23	82	6	50-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.33	83	10.0	8.31	83	70-140
4-Bromofluorobenzene	10.0	9.41	94	10.0	9.59	96	70-130
Toluene-d8	10.0	9.60	96	10.0	9.01	90	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F131
METHOD: METHOD 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	VO05G02B	VO05G02L	VO05G02C		
LAB FILE ID:	RGQ038	RGQ035	RGQ036		
DATE EXTRACTED:	07/02/1310:09	07/02/1308:33	07/02/1309:05	DATE COLLECTED:	NA
DATE ANALYZED:	07/02/1310:09	07/02/1308:33	07/02/1309:05	DATE RECEIVED:	07/02/13
PREP. BATCH:	VO05G02	VO05G02	VO05G02		
CALIB. REF:	RCQ458	RCQ458	RCQ458		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.14	91	10.0	9.42	94	3	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	9.17	92	10.0	9.39	94	2	70-130	30
1,1,2-Trichloroethane	ND	10.0	9.50	95	10.0	9.72	97	2	70-130	30
1,1-Dichloroethane	ND	10.0	9.18	92	10.0	9.21	92	0	70-130	30
1,1-Dichloroethene	ND	10.0	8.92	89	10.0	9.07	91	2	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	9.42	94	10.0	9.98	100	6	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	9.41	94	10.0	9.68	97	3	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	7.07	71	10.0	7.84	78	10	60-130	30
1,2-Dichlorobenzene	ND	10.0	10.3	103	10.0	10.1	101	2	70-130	30
1,2-Dichloroethane	ND	10.0	8.57	86	10.0	9.17	92	7	70-130	30
1,2-Dichloropropane	ND	10.0	9.29	93	10.0	9.53	95	2	70-130	30
1,3-Dichlorobenzene	ND	10.0	9.98	100	10.0	10.2	102	2	70-130	30
1,4-Dichlorobenzene	ND	10.0	9.80	98	10.0	10.0	100	2	70-130	30
2-Butanone	ND	50.0	40.7	81	50.0	45.2	90	10	60-140	30
2-Hexanone	ND	50.0	44.8	90	50.0	49.2	98	9	70-140	30
4-Methyl-2-Pentanone	ND	50.0	42.0	84	50.0	47.4	95	12	60-140	30
Acetone	ND	50.0	40.2	80	50.0	46.7	93	15	50-150	30
Benzene	ND	10.0	9.17	92	10.0	9.31	93	1	70-130	30
Bromochloromethane	ND	10.0	9.20	92	10.0	9.85	98	7	70-130	30
Bromodichloromethane	ND	10.0	8.65	87	10.0	9.01	90	4	70-130	30
Bromoform	ND	10.0	8.10	81	10.0	8.43	84	4	60-140	30
Bromomethane	ND	10.0	8.73	87	10.0	9.19	92	5	50-140	30
Carbon Disulfide	ND	10.0	8.51	85	10.0	9.06	91	6	50-140	30
Carbon Tetrachloride	ND	10.0	8.90	89	10.0	9.04	90	2	70-130	30
Chlorobenzene	ND	10.0	9.51	95	10.0	10.2	102	7	70-130	30
Chloroethane	ND	10.0	9.31	93	10.0	10.2	102	9	70-140	30
Chloroform	ND	10.0	9.47	95	10.0	9.50	95	0	70-130	30
Chloromethane	ND	10.0	9.55	95	10.0	9.65	97	1	60-130	30
cis-1,2-Dichloroethene	ND	10.0	9.17	92	10.0	9.63	96	5	70-130	30
cis-1,3-Dichloropropene	ND	10.0	8.22	82	10.0	8.97	90	9	70-130	30
Dibromochloromethane	ND	10.0	8.84	88	10.0	9.22	92	4	70-130	30
Ethylbenzene	ND	10.0	10.2	102	10.0	10.1	101	1	70-130	30
Isopropyl Benzene	ND	10.0	9.90	99	10.0	9.91	99	0	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	8.47	85	10.0	9.17	92	8	70-140	30
Methylene Chloride	ND	10.0	9.10	91	10.0	9.50	95	4	70-130	30
Styrene	ND	10.0	9.83	98	10.0	9.54	95	3	70-130	30
Tetrachloroethene	ND	10.0	9.78	98	10.0	9.42	94	4	70-130	30
Toluene	ND	10.0	9.70	97	10.0	9.47	95	2	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	8.82	88	10.0	9.21	92	4	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	8.41	84	10.0	8.55	85	2	70-140	30
Trichloroethene	ND	10.0	9.23	92	10.0	9.29	93	1	70-130	30
Vinyl Acetate	ND	10.0	7.62	76	10.0	9.16	92	18	20-160	30
Vinyl Chloride	ND	10.0	9.77	98	10.0	9.78	98	0	60-150	30
m- and p-Xylene	ND	20.0	19.3	97	20.0	19.8	99	2	70-130	30
o-Xylene	ND	10.0	9.74	97	10.0	9.80	98	1	70-130	30
Xylenes (Total)	ND	30.0	29.1	97	30.0	29.6	99	2	70-130	30
Naphthalene	ND	10.0	7.42	74	10.0	7.81	78	5	50-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.46	85	10.0	8.93	89	70-140
4-Bromofluorobenzene	10.0	10.0	100	10.0	9.94	99	70-130
Toluene-d8	10.0	9.45	94	10.0	9.20	92	70-130

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 16:52
Sample ID: IR12-062613-TB1	Date Analyzed: 06/27/13 16:52
Lab Samp ID: F131-01	Dilution Factor: 1
Lab File ID: EF27007A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	32.5	40.00	81.1	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
Batch No.	: 13F131	Date Extracted:	06/27/13 17:31
Sample ID:	IR12-062613-28	Date Analyzed:	06/27/13 17:31
Lab Samp ID:	F131-02	Dilution Factor:	1
Lab File ID:	EF27008A	Matrix :	WATER
Ext Btch ID:	VG39F07	% Moisture :	NA
Calib. Ref.:	EF27003A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.9	40.00	84.8	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 18:10
Sample ID: IR12-062613-29	Date Analyzed: 06/27/13 18:10
Lab Samp ID: F131-04	Dilution Factor: 1
Lab File ID: EF27009A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	34.0	40.00	85.0	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 18:49
Sample ID: IR12-062613-30	Date Analyzed: 06/27/13 18:49
Lab Samp ID: F131-06	Dilution Factor: 1
Lab File ID: EF27010A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.0	40.00	82.5	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 19:28
Sample ID: IR12-062613-SB	Date Analyzed: 06/27/13 19:28
Lab Samp ID: F131-08	Dilution Factor: 1
Lab File ID: EF27011A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.8	40.00	84.6	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 20:07
Sample ID: IR12-062613-ER	Date Analyzed: 06/27/13 20:07
Lab Samp ID: F131-10	Dilution Factor: 1
Lab File ID: EF27012A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.3	40.00	83.3	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 16:14
Sample ID: MBLK1W	Date Analyzed: 06/27/13 16:14
Lab Samp ID: VG39F07B	Dilution Factor: 1
Lab File ID: EF27006A	Matrix : WATER
Ext Btch ID: VG39F07	% Moisture : NA
Calib. Ref.: EF27003A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	32.8	40.00	82.0	70-130

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F131
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39F07B	VG39F07L	VG39F07C		
LAB FILE ID:	EF27006A	EF27004A	EF27005A		
DATE EXTRACTED:	06/27/1316:14	06/27/1314:52	06/27/1315:31	DATE COLLECTED:	NA
DATE ANALYZED:	06/27/1316:14	06/27/1314:52	06/27/1315:31	DATE RECEIVED:	06/27/13
PREP. BATCH:	VG39F07	VG39F07	VG39F07		
CALIB. REF:	EF27003A	EF27003A	EF27003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	491	98	500	503	101	2	60-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	39.1	98	40.0	39.5	99	70-130

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062613-28	Date Analyzed: 07/01/13 17:51
Lab Samp ID: F131-02	Dilution Factor: 1.04
Lab File ID: LG01022A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	52
MOTOR OIL	ND	520	52

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	779	1040	74.9	50-130
HEXACOSANE	237	260.0	91.1	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062613-29	Date Analyzed: 07/01/13 18:08
Lab Samp ID: F131-04	Dilution Factor: 1.03
Lab File ID: LG01023A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	54J	100	51
MOTOR OIL	57J	520	51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	755	1030	73.3	50-130
HEXACOSANE	243	257.5	94.5	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062613-30	Date Analyzed: 07/01/13 18:25
Lab Samp ID: F131-06	Dilution Factor: 1.05
Lab File ID: LG01024A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	52
MOTOR OIL	ND	520	52

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	782	1050	74.5	50-130
HEXACOSANE	237	262.5	90.5	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062613-SB	Date Analyzed: 07/01/13 18:42
Lab Samp ID: F131-08	Dilution Factor: 1.02
Lab File ID: LG01025A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	51
MOTOR OIL	ND	510	51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	771	1020	75.6	50-130
HEXACOSANE	237	255.0	92.7	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 06/26/13
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: IR12-062613-ER	Date Analyzed: 07/01/13 18:59
Lab Samp ID: F131-10	Dilution Factor: 0.97
Lab File ID: LG01026A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01015A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	97	48
MOTOR OIL	ND	480	48

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	725	970.0	74.7	50-130
HEXACOSANE	214	242.5	88.4	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 06/27/13
Batch No. : 13F131	Date Extracted: 06/27/13 14:00
Sample ID: MBLK1W	Date Analyzed: 07/01/13 13:02
Lab Samp ID: DSF019WB	Dilution Factor: 1
Lab File ID: LG01005A	Matrix : WATER
Ext Btch ID: DSF019W	% Moisture : NA
Calib. Ref.: LG01003A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	824	1000	82.4	50-140
HEXACOSANE	230	250.0	92.0	70-150

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F131
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSF019WB	DSF019WL	DSF019WC		
LAB FILE ID:	LG01005A	LG01006A	LG01007A		
DATE EXTRACTED:	06/27/1314:00	06/27/1314:00	06/27/1314:00	DATE COLLECTED:	NA
DATE ANALYZED:	07/01/1313:02	07/01/1313:19	07/01/1313:36	DATE RECEIVED:	06/27/13
PREP. BATCH:	DSF019W	DSF019W	DSF019W		
CALIB. REF:	LG01003A	LG01003A	LG01003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4270	85	5000	4130	83	3	70-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	927	93	1000	910	91	50-140
Hexacosane	250	243	97	250	239	96	70-150

METHOD 7470A
MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F131

Matrix : WATER
Instrument ID : 47

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062613-28T	F131-03	ND	1	NA	0.200	0.100	07/03/1316:51	07/03/1311:30	M47G002037	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-29T	F131-05	ND	1	NA	0.200	0.100	07/03/1316:55	07/03/1311:30	M47G002039	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-30T	F131-07	ND	1	NA	0.200	0.100	07/03/1316:59	07/03/1311:30	M47G002041	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-SBT	F131-09	ND	1	NA	0.200	0.100	07/03/1317:04	07/03/1311:30	M47G002043	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-ERT	F131-11	ND	1	NA	0.200	0.100	07/03/1317:13	07/03/1311:30	M47G002047	M47G002045	HGG003W	06/26/13	06/27/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F131
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

METHOD 7470A
DISSOLVED MERCURY BY COLD VAPOR

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F131

Matrix : WATER
Instrument ID : TI047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	HGG003WB	ND	1	NA	0.200	0.100	07/03/1315:51	07/03/1311:30	M47G002011	M47G002009	HGG003W	NA	07/03/13
LCS1W	HGG003WL	5.18	1	NA	0.200	0.100	07/03/1315:54	07/03/1311:30	M47G002012	M47G002009	HGG003W	NA	07/03/13
LCD1W	HGG003WC	5.26	1	NA	0.200	0.100	07/03/1315:56	07/03/1311:30	M47G002013	M47G002009	HGG003W	NA	07/03/13
IR12-062613-28	F131-02	ND	1	NA	0.200	0.100	07/03/1316:48	07/03/1311:30	M47G002036	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-29	F131-04	ND	1	NA	0.200	0.100	07/03/1316:53	07/03/1311:30	M47G002038	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-30	F131-06	ND	1	NA	0.200	0.100	07/03/1316:57	07/03/1311:30	M47G002040	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-SB	F131-08	ND	1	NA	0.200	0.100	07/03/1317:02	07/03/1311:30	M47G002042	M47G002033	HGG003W	06/26/13	06/27/13
IR12-062613-ER	F131-10	ND	1	NA	0.200	0.100	07/03/1317:06	07/03/1311:30	M47G002044	M47G002033	HGG003W	06/26/13	06/27/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F131
METHOD: METHOD 7470A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	HGG003WB	HGG003WL	HGG003WC		
LAB FILE ID:	M47G002011	M47G002012	M47G002013		
DATIME EXTRCTD:	07/03/1311:30	07/03/1311:30	07/03/1311:30	DATE COLLECTED:	NA
DATIME ANALYZD:	07/03/1315:51	07/03/1315:54	07/03/1315:56	DATE RECEIVED:	07/03/13
PREP. BATCH:	HGG003W	HGG003W	HGG003W		
CALIB. REF:	M47G002009	M47G002009	M47G002009		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Mercury	ND	5	5.18	104	5	5.26	105	2	80-120	20

METHOD 160.1
TOTAL DISSOLVED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F131

Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDG001WB	ND	1	NA	10	10	07/01/1317:12	NA	13TDG00101	13TDG001	TDG001W	NA	NA
LCS1W	TDG001WL	1000	1	NA	10	10	07/01/1317:12	NA	13TDG00102	13TDG001	TDG001W	NA	NA
LCD1W	TDG001WC	1030	1	NA	10	10	07/01/1317:12	NA	13TDG00103	13TDG001	TDG001W	NA	NA
IR12-062613-28	F131-02	11600	1	NA	10	10	07/01/1317:12	NA	13TDG00115	13TDG001	TDG001W	06/26/1308:40	06/27/13
IR12-062613-29	F131-04	1730	1	NA	10	10	07/01/1317:12	NA	13TDG00116	13TDG001	TDG001W	06/26/1308:45	06/27/13
IR12-062613-30	F131-06	380	1	NA	10	10	07/01/1317:12	NA	13TDG00117	13TDG001	TDG001W	06/26/1308:30	06/27/13
IR12-062613-SB	F131-08	ND	1	NA	10	10	07/01/1317:12	NA	13TDG00118	13TDG001	TDG001W	06/26/1311:12	06/27/13
IR12-062613-ER	F131-10	ND	1	NA	10	10	07/01/1317:12	NA	13TDG00119	13TDG001	TDG001W	06/26/1311:30	06/27/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F131
METHOD : 160.1

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	TDG001WB	TDG001WL	TDG001WC
LAB FILE ID :	13TDG00101	13TDG00102	13TDG00103
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	07/01/1317:12	07/01/1317:12	07/01/1317:12
PREP BATCH :	TDG001W	TDG001W	TDG001W
CALIBRATION REF:	13TDG001	13TDG001	13TDG001

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TDS	ND	1000	1000	100	1000	1030	103	3	80-120	20

METHOD 160.2
TOTAL SUSPENDED SOLIDS

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13F131
Matrix : WATER
InstrumentID : 40706360

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SSF006WB	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00601	13SSF006	SSF006W	NA	NA
LCS1W	SSF006WL	53	1	NA	10	10	06/27/1311:43	NA	13SSF00602	13SSF006	SSF006W	NA	NA
LCD1W	SSF006WC	52	1	NA	10	10	06/27/1311:43	NA	13SSF00603	13SSF006	SSF006W	NA	NA
IR12-062613-28	F131-02	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00612	13SSF006	SSF006W	06/26/1308:40	06/27/13
IR12-062613-29	F131-04	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00613	13SSF006	SSF006W	06/26/1308:45	06/27/13
IR12-062613-30	F131-06	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00614	13SSF006	SSF006W	06/26/1308:30	06/27/13
IR12-062613-SB	F131-08	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00615	13SSF006	SSF006W	06/26/1311:12	06/27/13
IR12-062613-ER	F131-10	ND	1	NA	10	10	06/27/1311:43	NA	13SSF00616	13SSF006	SSF006W	06/26/1311:30	06/27/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13F131
METHOD : 160.2

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SSF006WB	SSF006WL	SSF006WC
LAB FILE ID :	13SSF00601	13SSF00602	13SSF00603
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/27/1311:43	06/27/1311:43	06/27/1311:43
PREP BATCH :	SSF006W	SSF006W	SSF006W
CALIBRATION REF:	13SSF006	13SSF006	13SSF006

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
TSS	ND	56.7	53	93	56.7	52	92	2	80-120	20

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28T	Date Analyzed:	07/12/13 13:15 # 07/12/13 13:28
Lab Samp ID:	F131-03I #F131-03K	Dilution Factor:	5 # 10
Lab File ID:	F6G06022 #F6G06025	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	100
Antimony	ND	5.00	2.50
Arsenic	4.33J	5.00	1.00
Barium	186	5.00	2.50
Beryllium	ND	5.00	0.500
Cadmium	ND	5.00	1.00
Calcium	270000	5000	125
Chromium	ND	5.00	1.00
Cobalt	1.84J	5.00	1.00
Copper	ND	5.00	2.50
Iron	97.9J	5000	50.0
Lead	ND	5.00	0.500
Magnesium	540000	5000	50.0
Manganese	2810	5.00	1.00
Molybdenum	3.61J	10.0	2.50
Nickel	ND	5.00	2.50
Potassium	122000	5000	100
Selenium	ND	5.00	1.50
Silver	ND	5.00	1.00
# Sodium	3270000	10000	500
Thallium	ND	5.00	1.00
Vanadium	ND	5.00	2.50
Zinc	ND	100	50.0

Members of the Associated File

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28T	Date Analyzed:	07/12/13 13:15
Lab Samp ID:	F131-03I	Dilution Factor:	5
Lab File ID:	F6G06022	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	100
Antimony	ND	5.00	2.50
Arsenic	4.33J	5.00	1.00
Barium	186	5.00	2.50
Beryllium	ND	5.00	0.500
Cadmium	ND	5.00	1.00
Calcium	270000	5000	125
Chromium	ND	5.00	1.00
Cobalt	1.84J	5.00	1.00
Copper	ND	5.00	2.50
Iron	97.9J	5000	50.0
Lead	ND	5.00	0.500
Magnesium	540000	5000	50.0
Manganese	2810	5.00	1.00
Molybdenum	3.61J	10.0	2.50
Nickel	ND	5.00	2.50
Potassium	122000	5000	100
Selenium	ND	5.00	1.50
Silver	ND	5.00	1.00
Sodium	3190000E	5000	250
Thallium	ND	5.00	1.00
Vanadium	ND	5.00	2.50
Zinc	ND	100	50.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28TDL	Date Analyzed:	07/12/13 13:28
Lab Samp ID:	F131-03K	Dilution Factor:	10
Lab File ID:	F6G06025	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	200
Antimony	ND	10.0	5.00
Arsenic	4.60J	10.0	2.00
Barium	187	10.0	5.00
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	2.00
Calcium	275000	10000	250
Chromium	ND	10.0	2.00
Cobalt	ND	10.0	2.00
Copper	ND	10.0	5.00
Iron	103J	10000	100
Lead	ND	10.0	1.00
Magnesium	564000	10000	100
Manganese	2870	10.0	2.00
Molybdenum	ND	20.0	5.00
Nickel	ND	10.0	5.00
Potassium	125000	10000	200
Selenium	ND	10.0	3.00
Silver	ND	10.0	2.00
Sodium	3270000	10000	500
Thallium	ND	10.0	2.00
Vanadium	ND	10.0	5.00
Zinc	ND	200	100

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-29T	Date Analyzed:	07/12/13 14:04
Lab Samp ID:	F131-05N	Dilution Factor:	1
Lab File ID:	F6G06030	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06028	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	33.1J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	3.87	1.00	0.200
Barium	1250	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	171000	1000	25.0
Chromium	0.201J	1.00	0.200
Cobalt	0.360J	1.00	0.200
Copper	0.789J	1.00	0.500
Iron	6020	1000	10.0
Lead	0.392J	1.00	0.100
Magnesium	70100	1000	10.0
Manganese	371	1.00	0.200
Molybdenum	1.11J	2.00	0.500
Nickel	0.923J	1.00	0.500
Potassium	27400	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	270000	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-30T	Date Analyzed:	07/16/13 15:34
Lab Samp ID:	F131-07N	Dilution Factor:	1
Lab File ID:	98G04020	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	98G04016	Instrument ID :	T-I98

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	68.7J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	4.45	1.00	0.200
Barium	135	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	54500	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.862J	1.00	0.200
Copper	3.26	1.00	0.500
Iron	952J	1000	10.0
Lead	0.134J	1.00	0.100
Magnesium	10900	1000	10.0
Manganese	1080	1.00	0.200
Molybdenum	1.07J	2.00	0.500
Nickel	8.90	1.00	0.500
Potassium	5130	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	46200	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	56.3	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-SBT	Date Analyzed:	07/12/13 14:12
Lab Samp ID:	F131-09N	Dilution Factor:	1
Lab File ID:	F6G06032	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06028	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	32.5J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	252J	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	1.01	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	91.4J	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	52.5J	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	1300	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-ERT	Date Analyzed:	07/12/13 14:17
Lab Samp ID:	F131-11N	Dilution Factor:	1
Lab File ID:	F6G06033	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06028	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	20.2J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	268J	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	0.522J	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	91.1J	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	51.1J	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	1300	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	13.0J	20.0	10.0

METHOD 6020A
METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	07/02/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	MBLK1W	Date Analyzed:	07/12/13 12:58
Lab Samp ID:	IMG003WB	Dilution Factor:	1
Lab File ID:	F6G06018	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F131
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMG003WB	IMG003WL	IMG003WC		
LAB FILE ID:	F6G06018	F6G06019	F6G06020		
DATIME EXTRCTD:	07/02/1312:15	07/02/1312:15	07/02/1312:15	DATE COLLECTED:	NA
DATIME ANALYZD:	07/12/1312:58	07/12/1313:03	07/12/1313:07	DATE RECEIVED:	07/02/13
PREP. BATCH:	IMG003W	IMG003W	IMG003W		
CALIB. REF:	F6G06016	F6G06016	F6G06016		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2530	101	2500	2580	103	2	80-120	20
Antimony	ND	25.0	26.2	105	25.0	26.4	106	1	80-120	20
Arsenic	ND	25.0	26.0	104	25.0	25.9	104	0	80-120	20
Barium	ND	25.0	25.9	103	25.0	25.9	103	0	80-120	20
Beryllium	ND	25.0	23.3	93	25.0	23.9	96	3	80-120	20
Cadmium	ND	25.0	25.7	103	25.0	25.9	104	1	80-120	20
Calcium	ND	2500	2740	110	2500	2800	112	2	80-120	20
Chromium	ND	25.0	25.8	103	25.0	25.8	103	0	80-120	20
Cobalt	ND	25.0	26.0	104	25.0	26.0	104	0	80-120	20
Copper	ND	25.0	26.5	106	25.0	26.5	106	0	80-120	20
Iron	ND	2500	2690	108	2500	2760	111	3	80-120	20
Lead	ND	25.0	26.3	105	25.0	26.3	105	0	80-120	20
Magnesium	ND	2500	2470	99	2500	2560	102	3	80-120	20
Manganese	ND	25.0	26.3	105	25.0	26.7	107	1	80-120	20
Molybdenum	ND	25.0	25.2	101	25.0	25.2	101	0	80-120	20
Nickel	ND	25.0	26.1	105	25.0	26.1	105	0	80-120	20
Potassium	ND	2500	2630	105	2500	2700	108	3	80-120	20
Selenium	ND	25.0	26.8	107	25.0	26.3	105	2	80-120	20
Silver	ND	25.0	25.8	103	25.0	26.0	104	1	80-120	20
Sodium	ND	2500	2560	102	2500	2620	105	2	80-120	20
Thallium	ND	25.0	26.4	106	25.0	26.6	106	1	80-120	20
Vanadium	ND	25.0	25.9	103	25.0	25.9	104	0	80-120	20
Zinc	ND	50.0	51.8	104	50.0	52.2	104	1	80-120	20

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F131
METHOD: METHOD 6020A

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MATRIX: WATER % MOISTURE: NA
DILTN FACTR: 1 1
SAMPLE ID: IR12-062613-30T
CONTROL NO.: F131-07N F131-07A
LAB FILE ID: 98G04020 98G04019
DATIME EXTRCTD: 07/02/1312:15 07/02/1312:15 DATE COLLECTED: 06/26/13
DATIME ANALYZD: 07/16/1315:34 07/16/1315:30 DATE RECEIVED: 06/27/13
PREP. BATCH: IMG003W IMG003W
CALIB. REF: 98G04016 98G04016

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Aluminum	68.7J	2500	2620	102	80-120
Antimony	ND	25.0	27.3	109	80-120
Arsenic	4.45	25.0	30.3	103	80-120
Barium	135	25.0	162	107	80-120
Beryllium	ND	25.0	26.5	106	80-120
Cadmium	ND	25.0	26.4	105	80-120
Calcium	54500	2500	57100	102	80-120
Chromium	ND	25.0	26.0	104	80-120
Cobalt	0.862J	25.0	26.1	101	80-120
Copper	3.26	25.0	28.4	101	80-120
Iron	952J	2500	3650	108	80-120
Lead	0.134J	25.0	25.8	103	80-120
Magnesium	10900	2500	13300	94	80-120
Manganese	1080	25.0	1100	92	80-120
Molybdenum	1.07J	25.0	27.2	104	80-120
Nickel	8.90	25.0	34.2	101	80-120
Potassium	5130	2500	7980	114	80-120
Selenium	ND	25.0	26.2	105	80-120
Silver	ND	25.0	24.2	97	80-120
Sodium	46200	2500	47900	71*	80-120
Thallium	ND	25.0	25.0	100	80-120
Vanadium	ND	25.0	26.2	105	80-120
Zinc	56.3	50.0	107	101	80-120

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13F131
METHOD: METHOD 6020A

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 5
SAMPLE ID: IR12-062613-30TIR12-062613-30
EMAX SAMP ID: F131-07N F131-07J
LAB FILE ID: 98G04020 98G04021
DATE EXTRACTED: 07/02/1312:15 07/02/1312:15 DATE COLLECTED: 06/26/13
DATE ANALYZED: 07/16/1315:34 07/16/1315:39 DATE RECEIVED: 06/27/13
PREP. BATCH: IMG003W IMG003W
CALIB. REF: 98G04016 98G04016

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Aluminum	68.7J	ND	NA	10
Antimony	ND	ND	0	10
Arsenic	4.45	4.46J	NA	10
Barium	135	136	1	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Calcium	54500	56200	3	10
Chromium	ND	ND	0	10
Cobalt	0.862J	ND	NA	10
Copper	3.26	3.90J	NA	10
Iron	952J	1030J	NA	10
Lead	0.134J	ND	NA	10
Magnesium	10900	11700	7	10
Manganese	1080	1140	6	10
Molybdenum	1.07J	ND	NA	10
Nickel	8.90	8.78	1	10
Potassium	5130	5180	1	10
Selenium	ND	ND	0	10
Silver	ND	ND	0	10
Sodium	46200	48000	4	10
Thallium	ND	ND	0	10
Vanadium	ND	ND	0	10
Zinc	56.3	61.1J	NA	10

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28	Date Analyzed:	07/12/13 14:38 # 07/12/13 14:42
Lab Samp ID:	F131-02I #F131-02K	Dilution Factor:	5 # 10
Lab File ID:	F6G06038 #F6G06039	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	100
Antimony	ND	5.00	2.50
Arsenic	4.32J	5.00	1.00
Barium	178	5.00	2.50
Beryllium	ND	5.00	0.500
Cadmium	ND	5.00	1.00
Calcium	267000	5000	125
Chromium	ND	5.00	1.00
Cobalt	1.78J	5.00	1.00
Copper	ND	5.00	2.50
Iron	65.7J	5000	50.0
Lead	ND	5.00	0.500
Magnesium	465000	5000	50.0
Manganese	2750	5.00	1.00
Molybdenum	3.43J	10.0	2.50
Nickel	ND	5.00	2.50
Potassium	116000	5000	100
Selenium	ND	5.00	1.50
Silver	ND	5.00	1.00
# Sodium	3050000	10000	500
Thallium	ND	5.00	1.00
Vanadium	ND	5.00	2.50
Zinc	ND	100	50.0

Members of the Associated File

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28	Date Analyzed:	07/12/13 14:38
Lab Samp ID:	F131-02I	Dilution Factor:	5
Lab File ID:	F6G06038	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	100
Antimony	ND	5.00	2.50
Arsenic	4.32J	5.00	1.00
Barium	178	5.00	2.50
Beryllium	ND	5.00	0.500
Cadmium	ND	5.00	1.00
Calcium	267000	5000	125
Chromium	ND	5.00	1.00
Cobalt	1.78J	5.00	1.00
Copper	ND	5.00	2.50
Iron	65.7J	5000	50.0
Lead	ND	5.00	0.500
Magnesium	465000	5000	50.0
Manganese	2750	5.00	1.00
Molybdenum	3.43J	10.0	2.50
Nickel	ND	5.00	2.50
Potassium	116000	5000	100
Selenium	ND	5.00	1.50
Silver	ND	5.00	1.00
Sodium	2970000E	5000	250
Thallium	ND	5.00	1.00
Vanadium	ND	5.00	2.50
Zinc	ND	100	50.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-28DL	Date Analyzed:	07/12/13 14:42
Lab Samp ID:	F131-02K	Dilution Factor:	10
Lab File ID:	F6G06039	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	200
Antimony	ND	10.0	5.00
Arsenic	4.34J	10.0	2.00
Barium	179	10.0	5.00
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	2.00
Calcium	263000	10000	250
Chromium	ND	10.0	2.00
Cobalt	ND	10.0	2.00
Copper	ND	10.0	5.00
Iron	ND	10000	100
Lead	ND	10.0	1.00
Magnesium	480000	10000	100
Manganese	2810	10.0	2.00
Molybdenum	ND	20.0	5.00
Nickel	ND	10.0	5.00
Potassium	120000	10000	200
Selenium	ND	10.0	3.00
Silver	ND	10.0	2.00
Sodium	3050000	10000	500
Thallium	ND	10.0	2.00
Vanadium	ND	10.0	5.00
Zinc	ND	200	100

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-29	Date Analyzed:	07/12/13 14:46
Lab Samp ID:	F131-04N	Dilution Factor:	1
Lab File ID:	F6G06040	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	61.4J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	3.97	1.00	0.200
Barium	1240	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	172000	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.376J	1.00	0.200
Copper	1.08	1.00	0.500
Iron	5680	1000	10.0
Lead	ND	1.00	0.100
Magnesium	73900	1000	10.0
Manganese	371	1.00	0.200
Molybdenum	1.15J	2.00	0.500
Nickel	0.749J	1.00	0.500
Potassium	27900	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	285000	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-30	Date Analyzed:	07/12/13 14:51
Lab Samp ID:	F131-06N	Dilution Factor:	1
Lab File ID:	F6G06041	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	66.2J	100	20.0
Antimony	ND	1.00	0.500
Arsenic	3.88	1.00	0.200
Barium	122	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	55400	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	0.776J	1.00	0.200
Copper	2.44	1.00	0.500
Iron	666J	1000	10.0
Lead	ND	1.00	0.100
Magnesium	12600	1000	10.0
Manganese	899	1.00	0.200
Molybdenum	1.03J	2.00	0.500
Nickel	7.36	1.00	0.500
Potassium	5190	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	47100	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	53.3	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-SB	Date Analyzed:	07/12/13 14:55
Lab Samp ID:	F131-08N	Dilution Factor:	1
Lab File ID:	F6G06042	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	0.712J	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	308J	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	104J	1000	10.0
Manganese	0.285J	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	56.4J	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	1570	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	06/26/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	06/27/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	IR12-062613-ER	Date Analyzed:	07/12/13 14:59
Lab Samp ID:	F131-10N	Dilution Factor:	1
Lab File ID:	F6G06043	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06036	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	0.730J	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	285J	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	99.6J	1000	10.0
Manganese	0.370J	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	55.4J	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	1450	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

METHOD 6020A
DISSOLVED METALS BY ICP-MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	07/02/13
SDG NO.	: 13F131	Date Extracted:	07/02/13 12:15
Sample ID:	MBLK1W	Date Analyzed:	07/12/13 12:58
Lab Samp ID:	IMG003WB	Dilution Factor:	1
Lab File ID:	F6G06018	Matrix :	WATER
Ext Btch ID:	IMG003W	% Moisture :	NA
Calib. Ref.:	F6G06016	Instrument ID :	T-IF6

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	20.0
Antimony	ND	1.00	0.500
Arsenic	ND	1.00	0.200
Barium	ND	1.00	0.500
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.200
Calcium	ND	1000	25.0
Chromium	ND	1.00	0.200
Cobalt	ND	1.00	0.200
Copper	ND	1.00	0.500
Iron	ND	1000	10.0
Lead	ND	1.00	0.100
Magnesium	ND	1000	10.0
Manganese	ND	1.00	0.200
Molybdenum	ND	2.00	0.500
Nickel	ND	1.00	0.500
Potassium	ND	1000	20.0
Selenium	ND	1.00	0.300
Silver	ND	1.00	0.200
Sodium	ND	1000	50.0
Thallium	ND	1.00	0.200
Vanadium	ND	1.00	0.500
Zinc	ND	20.0	10.0

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
SDG NO.: 13F131
METHOD: METHOD 6020A

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IMG003WB	IMG003WL	IMG003WC		
LAB FILE ID:	F6G06018	F6G06019	F6G06020		
DATIME EXTRCTD:	07/02/1312:15	07/02/1312:15	07/02/1312:15	DATE COLLECTED:	NA
DATIME ANALYZD:	07/12/1312:58	07/12/1313:03	07/12/1313:07	DATE RECEIVED:	07/02/13
PREP. BATCH:	IMG003W	IMG003W	IMG003W		
CALIB. REF:	F6G06016	F6G06016	F6G06016		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	2500	2530	101	2500	2580	103	2	80-120	20
Antimony	ND	25.0	26.2	105	25.0	26.4	106	1	80-120	20
Arsenic	ND	25.0	26.0	104	25.0	25.9	104	0	80-120	20
Barium	ND	25.0	25.9	103	25.0	25.9	103	0	80-120	20
Beryllium	ND	25.0	23.3	93	25.0	23.9	96	3	80-120	20
Cadmium	ND	25.0	25.7	103	25.0	25.9	104	1	80-120	20
Calcium	ND	2500	2740	110	2500	2800	112	2	80-120	20
Chromium	ND	25.0	25.8	103	25.0	25.8	103	0	80-120	20
Cobalt	ND	25.0	26.0	104	25.0	26.0	104	0	80-120	20
Copper	ND	25.0	26.5	106	25.0	26.5	106	0	80-120	20
Iron	ND	2500	2690	108	2500	2760	111	3	80-120	20
Lead	ND	25.0	26.3	105	25.0	26.3	105	0	80-120	20
Magnesium	ND	2500	2470	99	2500	2560	102	3	80-120	20
Manganese	ND	25.0	26.3	105	25.0	26.7	107	1	80-120	20
Molybdenum	ND	25.0	25.2	101	25.0	25.2	101	0	80-120	20
Nickel	ND	25.0	26.1	105	25.0	26.1	105	0	80-120	20
Potassium	ND	2500	2630	105	2500	2700	108	3	80-120	20
Selenium	ND	25.0	26.8	107	25.0	26.3	105	2	80-120	20
Silver	ND	25.0	25.8	103	25.0	26.0	104	1	80-120	20
Sodium	ND	2500	2560	102	2500	2620	105	2	80-120	20
Thallium	ND	25.0	26.4	106	25.0	26.6	106	1	80-120	20
Vanadium	ND	25.0	25.9	103	25.0	25.9	104	0	80-120	20
Zinc	ND	50.0	51.8	104	50.0	52.2	104	1	80-120	20

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-2859-1
TestAmerica Sample Delivery Group: 13F106
Client Project/Site: Treasure Island

For:
EMAX Laboratories Inc
1835 W. 205th Street
Torrance, California 90501

Attn: Mr. Ye Myint

Authorized for release by:
7/30/2013 9:06:36 AM

Erika Gish, Project Manager I
erika.gish@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-2859-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: EMAX Laboratories Inc

Project: Treasure Island

Report Number: 160-2859-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt
Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

The following clean-up methods for Organic analyses may have been used on the samples in this data set. Specific methods employed are documented on the batch extraction logs:

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Job ID: 160-2859-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

RECEIPT

The samples were received on 6/28/2013 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

RADIUM-226 (GFPC)

Sample IR12-062413-20 (160-2859-1) was analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 07/03/2013 and analyzed on 07/26/2013.

No other difficulties were encountered during the Radium-226 (GFPC) analysis.

All other quality control parameters were within the acceptance limits.

CHAIN OF CUSTODY

CR79

N/6

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. * 13F106
PROJECT CODE:

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6 and 12
COORDINATOR
TEL / FAX / EMAIL
SEND REPORT TO: YE
COMPANY: 1835 W 205th STREET
ADDRESS: TORRANCE CA 90501
EMAX LABORATORIES, INC
EMAX PM: (310) 618-8889 ext 121

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaOH
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H_2SO_4
O=	

ANALYSIS REQUIRED: RADIUM 226, E 903.1 — IP 6/27/13

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☒ STANDARD

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	IR 12-062413-20		6/24/13	15:40	1			W	3	X	F106-04
2	IR12-062413-20MS		↓	↓	1			W	3	X	F106-04M
3	IR12-062413-20MSD		↓	↓	1			W	3	X	F106-04S
4											
5											
6											
7											
8											
9											
0											

IP 6/27/13

Instructions: EDD: ADR. PLEASE EMAIL THE RECEIPT OF SAMPLES, RESULTS, EDD TO YE MYINT@emaxlabs.com
cc: hbui@emaxlabs.com
Each EMAX control # for each Test America control #

Cooler # | Temp. (°C)

Sample #s: Sub To Test America (St Louis) 13715 Rider Trail North Earth City, MO 63045 Attn: Mike Franks

SAMPLER

RELINQUISHED BY	Date	Time	RECEIVED BY
Celestai Ole	6/27/13		Jill Clark TASL 6.28.13 0915

COURIER/AIRBILL

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Login Sample Receipt Checklist

Client: EMAX Laboratories Inc

Job Number: 160-2859-1
SDG Number: 13F106

Login Number: 2859
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-2859-1	IR12-062413-20	Water	06/24/13 15:40	06/28/13 09:15

Client Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Client Sample ID: IR12-062413-20

Lab Sample ID: 160-2859-1

Date Collected: 06/24/13 15:40

Matrix: Water

Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.171		0.143	0.144	1.00	0.124	pCi/L	07/03/13 13:54	07/26/13 05:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*40 - 110*	*07/03/13 13:54*	*07/26/13 05:52*	*1*

QC Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-59169/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63163 — **Prep Batch: 59169**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07860		0.0860	0.0863	1.00	0.0709	pCi/L	07/03/13 13:54	07/26/13 05:50	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*07/03/13 13:54*	*07/26/13 05:50*	*1*

Lab Sample ID: LCS 160-59169/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63163 — **Prep Batch: 59169**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDL	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	11.36		1.22	1.00	0.0656	pCi/L	102	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.5*		*40 - 110*

Lab Sample ID: 160-2859-1 MS — **Client Sample ID: IR12-062413-20**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63163 — **Prep Batch: 59169**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDL	Unit	%Rec	%Rec. Limits		
Radium-226	0.171		11.2	11.25		1.22	1.00	0.123	pCi/L	100	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*85.8*		*40 - 110*

Lab Sample ID: 160-2859-1 MSD — **Client Sample ID: IR12-062413-20**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63163 — **Prep Batch: 59169**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDL	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.171		11.9	12.37		1.33	1.00	0.103	pCi/L	104	75 - 138	0.44	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*85.0*		*40 - 110*

QC Association Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Rad

Prep Batch: 59169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2859-1	IR12-062413-20	Total/NA	Water	PrecSep-21	
160-2859-1 MS	IR12-062413-20	Total/NA	Water	PrecSep-21	
160-2859-1 MSD	IR12-062413-20	Total/NA	Water	PrecSep-21	
LCS 160-59169/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-59169/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Tracer/Carrier Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2859-1
SDG: 13F106

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(40-110)							
160-2859-1	IR12-062413-20	86.1							
160-2859-1 MS	IR12-062413-20	85.8							
160-2859-1 MSD	IR12-062413-20	85.0							
LCS 160-59169/2-A	Lab Control Sample	88.5							
MB 160-59169/1-A	Method Blank	92.3							

Tracer/Carrier Legend

Ba = Ba Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-2860-1
TestAmerica Sample Delivery Group: 13F118
Client Project/Site: Treasure Island

For:
EMAX Laboratories Inc
1835 W. 205th Street
Torrance, California 90501

Attn: Mr. Ye Myint

Authorized for release by:
7/30/2013 9:36:02 AM

Erika Gish, Project Manager I
erika.gish@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Association Summary 12
Tracer Carrier Summary 13

Job ID: 160-2860-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: EMAX Laboratories Inc

Project: Treasure Island

Report Number: 160-2860-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt
Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

The following clean-up methods for Organic analyses may have been used on the samples in this data set. Specific methods employed are documented on the batch extraction logs:

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Job ID: 160-2860-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

RECEIPT

The samples were received on 6/28/2013 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

RADIUM-226 (GFPC)

Samples IR12-062513-22 (160-2860-1), IR12-062513-23 (160-2860-2), IR12-062513-05 (160-2860-3) and IR12-062513-05D (160-2860-4) were analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 07/03/2013 and analyzed on 07/26/2013.

Sample IR12-062513-05D (160-2860-4) was run at a reduced aliquot of 882.26 mL because an insufficient amount was received to reach full aliquot.

No other difficulties were encountered during the Radium-226 (GFPC) analysis.

All other quality control parameters were within the acceptance limits.

Cal 79

26

CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. * 13F118
PROJECT CODE:

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6/12
COORDINATOR
TEL / FAX / EMAIL
SEND REPORT TO: YE MYINT
COMPANY: EMAX LABORATORIES, INC
ADDRESS: SEE ABOVE
EMAX PM: YE MYINT

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaOH
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H_2SO_4
O=	

ANALYSIS REQUIRED: RADIUM 226; E 903.1; LP 6/27/13

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☒ STANDARD

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	RADIUM 226	E 903.1	COMMENTS
1	IR12-062513-22		6/25/13	7:45	1			W	4	X		F118-02
2	IR12-062513-23		6/25/13	07:50	1			W	3	X	X	F118-04
3	IR12-062513-05		6/25/13	07:50	1			W	3	X	X	F118-06
4	IR12-062513-05D		6/25/13	07:55	1			W	3	X	X	F118-08
5												
6												
7												
8												
9												
0												

Instructions: Each EMAX control # for each Test America control # ADR EDD.
PLEASE email the receipt of samples, results, EDD to Ye and cc Hanh (Hbui@emax-lab.com).

Cooler # | Temp. (°C)

Sample #s

Sub To:
Test America (St Louis)
13715 Rider Trail North
Earth City, MO 63045
Attn: Mike Franks

SAMPLER
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
[signature]	6/27/13		Jill Clark TASL 6/28/13 0915

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Login Sample Receipt Checklist

Client: EMAX Laboratories Inc

Job Number: 160-2860-1
SDG Number: 13F118

Login Number: 2860
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Qualifiers

Rad

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-2860-1	IR12-062513-22	Water	06/25/13 07:45	06/28/13 09:15
160-2860-2	IR12-062513-23	Water	06/25/13 07:50	06/28/13 09:15
160-2860-3	IR12-062513-05	Water	06/25/13 07:50	06/28/13 09:15
160-2860-4	IR12-062513-05D	Water	06/25/13 07:55	06/28/13 09:15

Client Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Client Sample ID: IR12-062513-22

Lab Sample ID: 160-2860-1
Date Collected: 06/25/13 07:45
Matrix: Water
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.188		0.119	0.120	1.00	0.0876	pCi/L	07/03/13 13:54	07/26/13 05:53	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110	07/03/13 13:54	07/26/13 05:53	1

Client Sample ID: IR12-062513-23

Lab Sample ID: 160-2860-2
Date Collected: 06/25/13 07:50
Matrix: Water
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.160		0.114	0.115	1.00	0.0858	pCi/L	07/03/13 13:54	07/26/13 05:53	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.1		40 - 110	07/03/13 13:54	07/26/13 05:53	1

Client Sample ID: IR12-062513-05

Lab Sample ID: 160-2860-3
Date Collected: 06/25/13 07:50
Matrix: Water
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.187		0.119	0.120	1.00	0.0810	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.1		40 - 110	07/03/13 13:54	07/26/13 05:54	1

Client Sample ID: IR12-062513-05D

Lab Sample ID: 160-2860-4
Date Collected: 06/25/13 07:55
Matrix: Water
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0828	U	0.109	0.109	1.00	0.0960	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110	07/03/13 13:54	07/26/13 05:54	1

QC Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-59169/1-A
Matrix: Water
Analysis Batch: 63163

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 59169

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07860		0.0860	0.0863	1.00	0.0709	pCi/L	07/03/13 13:54	07/26/13 05:50	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*07/03/13 13:54*	*07/26/13 05:50*	*1*

Lab Sample ID: LCS 160-59169/2-A
Matrix: Water
Analysis Batch: 63163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 59169

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDL	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	11.36		1.22	1.00	0.0656	pCi/L	102	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.5*		*40 - 110*

QC Association Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Rad

Prep Batch: 59169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2860-1	IR12-062513-22	Total/NA	Water	PrecSep-21	
160-2860-2	IR12-062513-23	Total/NA	Water	PrecSep-21	
160-2860-3	IR12-062513-05	Total/NA	Water	PrecSep-21	
160-2860-4	IR12-062513-05D	Total/NA	Water	PrecSep-21	
LCS 160-59169/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-59169/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Tracer/Carrier Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2860-1
SDG: 13F118

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(40-110)							
160-2860-1	IR12-062513-22	89.1							
160-2860-2	IR12-062513-23	86.1							
160-2860-3	IR12-062513-05	86.1							
160-2860-4	IR12-062513-05D	92.3							
LCS 160-59169/2-A	Lab Control Sample	88.5							
MB 160-59169/1-A	Method Blank	92.3							

Tracer/Carrier Legend

Ba = Ba Carrier

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-2861-1
TestAmerica Sample Delivery Group: 13F131
Client Project/Site: Treasure Island

For:
EMAX Laboratories Inc
1835 W. 205th Street
Torrance, California 90501

Attn: Mr. Ye Myint

Authorized for release by:
7/30/2013 10:10:53 AM

Erika Gish, Project Manager I
erika.gish@testamericainc.com

LINKS

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Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-2861-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: EMAX Laboratories Inc

Project: Treasure Island

Report Number: 160-2861-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt
Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

The following clean-up methods for Organic analyses may have been used on the samples in this data set. Specific methods employed are documented on the batch extraction logs:

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Job ID: 160-2861-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

RECEIPT

The samples were received on 6/28/2013 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

RADIUM-226 (GFPC)

Samples IR12-062613-28 (160-2861-1), IR12-062613-29 (160-2861-2), IR12-062613-30 (160-2861-3), IR12-062613-SB (160-2861-4) and IR12-062613-ER (160-2861-5) were analyzed for Radium-226 (GFPC) in accordance with EPA Method 903.0. The samples were prepared on 07/03/2013 and analyzed on 07/26/2013.

No other difficulties were encountered during the Radium-226 (GFPC) analysis.

All other quality control parameters were within the acceptance limits.

CHAIN OF CUSTODY

CR 79

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. * 13F131
PROJECT CODE:

CLIENT: TREVET
PROJECT: TREASURE ISLAND SITE 6812
COORDINATOR
TEL FAX EMAIL
SEND REPORT TO: YE MYINT
COMPANY: EMAX LABORATORIES, INC
ADDRESS: SEE ABOVE
EMAX PM

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaOH
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H_2SO_4
O=	

ANALYSIS REQUIRED: RADIUM 226, E 903.1 — LP 6/27/13

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☒ STANDARD

LAB	SAMPLE ID CLIENT 6	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	TR12-062813-28		6/26/13	08:40	1		Poly	W	4		F131-02
2	TR12-062613-29		↓	08:45	1		↓	W	3		F131-04
3	TR12-062613-30		↓	08:30	1		↓	W	3		F131-06
4	TR12-062613-SB		↓	11:12	1		↓	W	3		F131-08
5	TR12-062613-ER		↓	11:30	1		↓	W	3		F131-10
6											
7											
8											
9											
0											

LP 6/27/13

Instructions: Each emax control # for each Test America lot #
EDD: ADR. Please email the receipt of samples, result and EDD to Hanh (Hbui@emaxlabs.com) and Ye

Cooler # | Temp. (°C)

Sample #s: Sub to Test America (St louis) 13715 Rider Trail North Earth City, MO 63045 Attn: Mike Frank

SAMPLER
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
[signature]	6/27/13		Jill Clarke TASR 6-28-13 0915

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Login Sample Receipt Checklist

Client: EMAX Laboratories Inc

Job Number: 160-2861-1
SDG Number: 13F131

Login Number: 2861
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-2861-1	IR12-062613-28	Water	06/26/13 08:40	06/28/13 09:15
160-2861-2	IR12-062613-29	Water	06/26/13 08:45	06/28/13 09:15
160-2861-3	IR12-062613-30	Water	06/26/13 08:30	06/28/13 09:15
160-2861-4	IR12-062613-SB	Water	06/26/13 11:12	06/28/13 09:15
160-2861-5	IR12-062613-ER	Water	06/26/13 11:30	06/28/13 09:15

Client Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Client Sample ID: IR12-062613-28

Lab Sample ID: 160-2861-1
Matrix: Water

Date Collected: 06/26/13 08:40
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.441		0.162	0.166	1.00	0.0979	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110	07/03/13 13:54	07/26/13 05:54	1

Client Sample ID: IR12-062613-29

Lab Sample ID: 160-2861-2
Matrix: Water

Date Collected: 06/26/13 08:45
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.467		0.162	0.168	1.00	0.0934	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110	07/03/13 13:54	07/26/13 05:54	1

Client Sample ID: IR12-062613-30

Lab Sample ID: 160-2861-3
Matrix: Water

Date Collected: 06/26/13 08:30
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.152		0.120	0.120	1.00	0.0940	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	83.8		40 - 110	07/03/13 13:54	07/26/13 05:54	1

Client Sample ID: IR12-062613-SB

Lab Sample ID: 160-2861-4
Matrix: Water

Date Collected: 06/26/13 11:12
Date Received: 06/28/13 09:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.115		0.0900	0.0906	1.00	0.0620	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.0		40 - 110	07/03/13 13:54	07/26/13 05:54	1

Client Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Client Sample ID: IR12-062613-ER

Date Collected: 06/26/13 11:30
Date Received: 06/28/13 09:15

Lab Sample ID: 160-2861-5

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.117	0.118	1.00	0.0928	pCi/L	07/03/13 13:54	07/26/13 05:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*40 - 110*	*07/03/13 13:54*	*07/26/13 05:54*	*1*

QC Sample Results

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-59169/1-A
Matrix: Water
Analysis Batch: 63163

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 59169

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07860		0.0860	0.0863	1.00	0.0709	pCi/L	07/03/13 13:54	07/26/13 05:50	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*07/03/13 13:54*	*07/26/13 05:50*	*1*

Lab Sample ID: LCS 160-59169/2-A
Matrix: Water
Analysis Batch: 63163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 59169

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDL	Unit	%Rec	%Rec. Limits		
Radium-226			11.2	11.36		1.22	1.00	0.0656	pCi/L	102	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.5*		*40 - 110*

QC Association Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Rad

Prep Batch: 59169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-2861-1	IR12-062613-28	Total/NA	Water	PrecSep-21	
160-2861-2	IR12-062613-29	Total/NA	Water	PrecSep-21	
160-2861-3	IR12-062613-30	Total/NA	Water	PrecSep-21	
160-2861-4	IR12-062613-SB	Total/NA	Water	PrecSep-21	
160-2861-5	IR12-062613-ER	Total/NA	Water	PrecSep-21	
LCS 160-59169/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-59169/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Tracer/Carrier Summary

Client: EMAX Laboratories Inc
Project/Site: Treasure Island

TestAmerica Job ID: 160-2861-1
SDG: 13F131

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(40-110)							
160-2861-1	IR12-062613-28	93.8							
160-2861-2	IR12-062613-29	94.4							
160-2861-3	IR12-062613-30	83.8							
160-2861-4	IR12-062613-SB	85.0							
160-2861-5	IR12-062613-ER	83.8							
LCS 160-59169/2-A	Lab Control Sample	88.5							
MB 160-59169/1-A	Method Blank	92.3							

Tracer/Carrier Legend

Ba = Ba Carrier

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L, Carlsbad, CA 92009 Bus: 760/634-0437 Fax: 760/634-0439

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

September 12, 2013

SUBJECT: Treasure Island, IR Sites 6 & 12, Data Validation

Dear Mrs. Bjorkman,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30241:

SDG #	Fraction
13F106/160-2859-1	Volatiles, Metals, Total Petroleum Hydrocarbons as
13F131/160-2861-1	Gasoline, Total Petroleum Hydrocarbons as Extractables,
13F118/160-2860-1	Methane, Ethane, & Ethene, Wet Chemistry, Radium-226

The data validation was performed under EPA Level III & IV validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, CLPNFG, January 2010
- Multi Agency Radiological Laboratory Analytical Protocols, MARLAP, Manual, July 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

ADR/IV

LDC #30241 (Trevet/Accord-San Diego / Treasure Island, IR Sites 6 & 12)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Metals (SW846)		Diss. Metals (SW846)		TPH-G (8015M)		TPH-E 8015M		Methane Ethane Ethene		Cl,SO_4 (300.0)		NO_3-N (353.3)		S= (376.1)		TDS (160.1)		TSS (160.2)		Ra-226 (903.0)																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	13F106/160-2859-1	08/15/13	09/06/13	3	0	1	0	1	0	4	0	3	0	6	0	3	0	3	0	2	0	1	0	1	0	1	0																
B	13F131/160-2861-1	08/15/13	09/06/13	5	0	4	0	4	0	5	0	4	0	-	-	-	-	-	-	-	-	4	0	4	0	4	0																
B	13F131/160-2861-1	08/15/13	09/06/13	1	0	1	0	1	0	1	0	1	0	-	-	-	-	-	-	-	-	1	0	1	0	1	0																
C	13F118/160-2860-1	08/15/13	09/06/13	-	-	3	0	3	0	4	0	3	0	6	0	3	0	3	0	3	0	3	0	3	0	3	0																
C	13F118/160-2860-1	08/15/13	09/06/13	-	-	1	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0	1	0	1	0																
Total	A/T/AK			9	0	10	0	10	0	15	0	12	0	14	0	7	0	7	0	6	0	10	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120

Shaded cells indicate Level IV validation (all other cells are Level III validation) These sample counts do not include MS/MSD and DUPs

Data Validation Report
Treasure Island, IR Sites 6 & 12

SDG(s): 13F106/160-2859-1, 13F131/160-2861-1, 13F118/160-2860-1

Prepared for

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126

Prepared by

Laboratory Data Consultants, Inc
7750 El Camino Real, Suite 2L
Carlsbad, California 92009

September 12, 2013

INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the June 2013 sampling period. Data validation was performed in accordance with US EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (CLPNFG) (June 2008), US EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (CLPNFG) (January 2010), and Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Metals by EPA SW 846 Method 6020A/7470A
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Methane, Ethene, and Ethane by Method RSK-175
Radium-226 by EPA Method 903.0

Wet Chemistry:
Chloride and Sulfate by EPA Method 300.0
Nitrate as Nitrogen by EPA Method 353.3
Sulfide by EPA Method 376.1
Total Dissolved Solids (TDS) by EPA Method 160.1
Total Suspended Solids (TSS) by EPA Method 160.2

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations (ICB/CCBs), surrogates, internal standards, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, and equipment blanks. Approximately 11 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment I, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, internal standard, and interference check samples, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs and MARLAP were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method or preparation blanks with the exception of 2 blanks. The associated sample results were qualified as non-detected (U). The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
13F131/ 6020A	ICB/CCB	Sodium	57.8 ug/L	IR12-062613-28

Sample concentrations were compared to concentrations detected in the initial and continuing blanks. The sample concentrations were not detected or were significantly greater (>5X for contaminants) than the concentrations found in the associated blanks.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

IX. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDGs 13F106/160-2859-1, 13F131/160-2861-1, 13F118/160-2860-1	All compounds reported as detected below the RL.	J (all detects)	A

In instances where data was reported above the calibration range and subsequently diluted, data was qualified as unusable by the validators in order to yield only one complete set of data for a given sample.

XIII. Field Duplicate Samples

Two field duplicate pairs were collected and analyzed for metals, TPH as gasoline, TPH as extractables, methane, ethane and ethane, chloride, sulfate, nitrate as nitrogen, sulfide, TDS, TSS and radium-226. No data was qualified on the basis of field duplicate RPDs outside the QC limits. The field duplicate result comparisons are provided in Enclosure I.

Three trip blanks were collected and analyzed for VOCs and TPH as gasoline. No contaminants were found in the trip blanks.

One equipment blank was collected and analyzed for VOCs, TPH as gasoline, TPH as extractables, metals, TDS, TSS, and Radium-226. The equipment blank had detections for several metals and radium-226. Several sample results were qualified as non-detected (U) due to equipment blank contamination. The equipment blank outlier reports are presented in Enclosure I.

One source blank was collected and analyzed for VOCs, TPH as gasoline, TPH as extractables, metals, TDS, TSS, and Radium-226. The source blank had detections for several metals and radium- 226. Several sample results were qualified as non-detected (U) due to source blank contamination. The source blank outlier reports are presented in Enclosure I.

XV. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jun-2013	IR06-062413-TB1	F106-01	TB	5030B	8015B GRO	3
24-Jun-2013	IR06-062413-TB1	F106-01	TB	5030B	8260B	3
24-Jun-2013	IR06-062413-25	F106-02	N	3520C	8015B DRO	3
24-Jun-2013	IR06-062413-25	F106-02	N	5030B	8015B GRO	3
24-Jun-2013	IR06-062413-25	F106-02	N	5030B	8260B	3
24-Jun-2013	IR06-062413-25	F106-02	N	GEN PREP	353.3	3
24-Jun-2013	IR06-062413-25	F106-02	N	GEN PREP	376.1	3
24-Jun-2013	IR06-062413-25	F106-02	N	GEN PREP	RSK-175	3
24-Jun-2013	IR06-062413-25	F106-02I	N	GEN PREP	300.0	3
24-Jun-2013	IR06-062413-25	F106-02I	N	GEN PREP	RSK-175	3
24-Jun-2013	IR12-062413-20	160-2859-1	N	PrecSep-21	903.0 MOD	3
24-Jun-2013	IR12-062413-20MS	160-2859-1MS	MS	PrecSep-21	903.0 MOD	3
24-Jun-2013	IR12-062413-20MSD	160-2859-1MSD	MSD	PrecSep-21	903.0 MOD	3
24-Jun-2013	IR12-062413-20	F106-04	N	3520C	8015B DRO	3
24-Jun-2013	IR12-062413-20	F106-04	N	5030B	8015B GRO	3
24-Jun-2013	IR12-062413-20	F106-04	N	7470A	7470A	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	160.1	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	160.2	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	300.0	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	353.3	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	6020A	3
24-Jun-2013	IR12-062413-20	F106-04	N	GEN PREP	RSK-175	3
24-Jun-2013	IR12-062413-20DUP	F106-04D	DUP	GEN PREP	160.1	3
24-Jun-2013	IR12-062413-20DUP	F106-04D	DUP	GEN PREP	160.2	3
24-Jun-2013	IR12-062413-20DUP	F106-04D	DUP	GEN PREP	300.0	3
24-Jun-2013	IR12-062413-20DUP	F106-04D	DUP	GEN PREP	353.3	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jun-2013	IR12-062413-20	F106-04I	N	GEN PREP	RSK-175	3
24-Jun-2013	IR12-062413-20MS	F106-04IM	MS	GEN PREP	300.0	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	3520C	8015B DRO	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	5030B	8015B GRO	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	7470A	7470A	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	GEN PREP	353.3	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	GEN PREP	6020A	3
24-Jun-2013	IR12-062413-20MS	F106-04M	MS	GEN PREP	RSK-175	3
24-Jun-2013	IR12-062413-20MSD	F106-04S	MSD	3520C	8015B DRO	3
24-Jun-2013	IR12-062413-20MSD	F106-04S	MSD	5030B	8015B GRO	3
24-Jun-2013	IR12-062413-20MSD	F106-04S	MSD	7470A	7470A	3
24-Jun-2013	IR12-062413-20MSD	F106-04S	MSD	GEN PREP	6020A	3
24-Jun-2013	IR12-062413-20MSD	F106-04S	MSD	GEN PREP	RSK-175	3
24-Jun-2013	IR12-062413-20T	F106-05	N	7470A	7470A	3
24-Jun-2013	IR12-062413-20T	F106-05	N	GEN PREP	6020A	3
24-Jun-2013	IR12-062413-20TMS	F106-05M	MS	7470A	7470A	3
24-Jun-2013	IR12-062413-20TMS	F106-05M	MS	GEN PREP	6020A	3
24-Jun-2013	IR12-062413-20TMSD	F106-05S	MSD	7470A	7470A	3
24-Jun-2013	IR12-062413-20TMSD	F106-05S	MSD	GEN PREP	6020A	3
24-Jun-2013	IR06-062413-26	F106-03	N	3520C	8015B DRO	3
24-Jun-2013	IR06-062413-26	F106-03	N	5030B	8015B GRO	3
24-Jun-2013	IR06-062413-26	F106-03	N	5030B	8260B	3
24-Jun-2013	IR06-062413-26	F106-03	N	GEN PREP	353.3	3
24-Jun-2013	IR06-062413-26	F106-03	N	GEN PREP	376.1	3
24-Jun-2013	IR06-062413-26	F106-03	N	GEN PREP	RSK-175	3
24-Jun-2013	IR06-062413-26	F106-03I	N	GEN PREP	300.0	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jun-2013	IR06-062413-26	F106-03I	N	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-TB1	F118-01	TB	5030B	8015B GRO	3
25-Jun-2013	IR12-062513-22	160-2860-1	N	PrecSep-21	903.0 MOD	4
25-Jun-2013	IR12-062513-22	F118-02	N	3520C	8015B DRO	4
25-Jun-2013	IR12-062513-22	F118-02	N	5030B	8015B GRO	4
25-Jun-2013	IR12-062513-22	F118-02	N	7470A	7470A	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	160.1	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	160.2	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	353.3	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	376.1	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	6020A	4
25-Jun-2013	IR12-062513-22	F118-02	N	GEN PREP	RSK-175	4
25-Jun-2013	IR12-062513-22DUP	F118-02D	DUP	GEN PREP	376.1	4
25-Jun-2013	IR12-062513-22	F118-02I	N	GEN PREP	300.0	4
25-Jun-2013	IR12-062513-22	F118-02I	N	GEN PREP	RSK-175	4
25-Jun-2013	IR12-062513-22	F118-02J	N	GEN PREP	300.0	4
25-Jun-2013	IR12-062513-22T	F118-03	N	7470A	7470A	3
25-Jun-2013	IR12-062513-22T	F118-03	N	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-23	160-2860-2	N	PrecSep-21	903.0 MOD	3
25-Jun-2013	IR12-062513-05	160-2860-3	N	PrecSep-21	903.0 MOD	3
25-Jun-2013	IR12-062513-23	F118-04	N	3520C	8015B DRO	3
25-Jun-2013	IR12-062513-23	F118-04	N	5030B	8015B GRO	3
25-Jun-2013	IR12-062513-23	F118-04	N	7470A	7470A	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	160.1	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	160.2	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	300.0	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	353.3	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	376.1	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-23	F118-04	N	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-23	F118-04I	N	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-23T	F118-05	N	7470A	7470A	3
25-Jun-2013	IR12-062513-23T	F118-05	N	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05	F118-06	N	3520C	8015B DRO	3
25-Jun-2013	IR12-062513-05	F118-06	N	5030B	8015B GRO	3
25-Jun-2013	IR12-062513-05	F118-06	N	7470A	7470A	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	160.1	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	160.2	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	300.0	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	353.3	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	376.1	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05	F118-06	N	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-05	F118-06I	N	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-05T	F118-07	N	7470A	7470A	3
25-Jun-2013	IR12-062513-05T	F118-07	N	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05D	160-2860-4	FD	PrecSep-21	903.0 MOD	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	3520C	8015B DRO	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	5030B	8015B GRO	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	7470A	7470A	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	160.1	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	160.2	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	300.0	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	353.3	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	376.1	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05D	F118-08	FD	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-05D	F118-08I	FD	GEN PREP	RSK-175	3
25-Jun-2013	IR12-062513-05TD	F118-09	FD	7470A	7470A	3
25-Jun-2013	IR12-062513-05TD	F118-09	FD	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05TDMS	F118-09M	MS	GEN PREP	6020A	3
25-Jun-2013	IR12-062513-05TDMSD	F118-09S	MSD	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-TB1	F131-01	TB	5030B	8015B GRO	3
26-Jun-2013	IR12-062613-TB1	F131-01	TB	5030B	8260B	3
26-Jun-2013	IR12-062613-30	160-2861-3	N	PrecSep-21	903.0 MOD	3
26-Jun-2013	IR12-062613-30	F131-06	N	3520C	8015B DRO	3
26-Jun-2013	IR12-062613-30	F131-06	N	5030B	8015B GRO	3
26-Jun-2013	IR12-062613-30	F131-06	N	7470A	7470A	3
26-Jun-2013	IR12-062613-30	F131-06	N	GEN PREP	160.1	3
26-Jun-2013	IR12-062613-30	F131-06	N	GEN PREP	160.2	3
26-Jun-2013	IR12-062613-30	F131-06N	N	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-30	F131-06R	N	5030B	8260B	3
26-Jun-2013	IR12-062613-30T	F131-07	N	7470A	7470A	3
26-Jun-2013	IR12-062613-30T	F131-07N	N	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-28	160-2861-1	N	PrecSep-21	903.0 MOD	4
26-Jun-2013	IR12-062613-28	F131-02	N	3520C	8015B DRO	4
26-Jun-2013	IR12-062613-28	F131-02	N	5030B	8015B GRO	4
26-Jun-2013	IR12-062613-28	F131-02	N	5030B	8260B	4

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Jun-2013	IR12-062613-28	F131-02	N	7470A	7470A	4
26-Jun-2013	IR12-062613-28	F131-02	N	GEN PREP	160.1	4
26-Jun-2013	IR12-062613-28	F131-02	N	GEN PREP	160.2	4
26-Jun-2013	IR12-062613-28	F131-02I	N	GEN PREP	6020A	4
26-Jun-2013	IR12-062613-28T	F131-03	N	7470A	7470A	4
26-Jun-2013	IR12-062613-28T	F131-03I	N	GEN PREP	6020A	4
26-Jun-2013	IR12-062613-29	160-2861-2	N	PrecSep-21	903.0 MOD	3
26-Jun-2013	IR12-062613-29	F131-04	N	3520C	8015B DRO	3
26-Jun-2013	IR12-062613-29	F131-04	N	5030B	8015B GRO	3
26-Jun-2013	IR12-062613-29	F131-04	N	7470A	7470A	3
26-Jun-2013	IR12-062613-29	F131-04	N	GEN PREP	160.1	3
26-Jun-2013	IR12-062613-29	F131-04	N	GEN PREP	160.2	3
26-Jun-2013	IR12-062613-29	F131-04N	N	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-29	F131-04R	N	5030B	8260B	3
26-Jun-2013	IR12-062613-29T	F131-05	N	7470A	7470A	3
26-Jun-2013	IR12-062613-29T	F131-05N	N	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-SB	160-2861-4	SB	PrecSep-21	903.0 MOD	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	3520C	8015B DRO	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	5030B	8015B GRO	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	5030B	8260B	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	7470A	7470A	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	GEN PREP	160.1	3
26-Jun-2013	IR12-062613-SB	F131-08	SB	GEN PREP	160.2	3
26-Jun-2013	IR12-062613-SB	F131-08N	SB	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-SBT	F131-09	SB	7470A	7470A	3
26-Jun-2013	IR12-062613-SBT	F131-09N	SB	GEN PREP	6020A	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Jun-2013	IR12-062613-ER	160-2861-5	ER	PrecSep-21	903.0 MOD	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	3520C	8015B DRO	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	5030B	8015B GRO	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	5030B	8260B	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	7470A	7470A	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	GEN PREP	160.1	3
26-Jun-2013	IR12-062613-ER	F131-10	ER	GEN PREP	160.2	3
26-Jun-2013	IR12-062613-ER	F131-10N	ER	GEN PREP	6020A	3
26-Jun-2013	IR12-062613-ERT	F131-11	ER	7470A	7470A	3
26-Jun-2013	IR12-062613-ERT	F131-11N	ER	GEN PREP	6020A	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **AQ**

SDG: **13F106**

Sample ID: IR12-062413-20 ***Collected:*** 6/24/2013 3:40:00 ***Analysis Type:*** RES/DIS ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.382	J	0.200	MDL	1.00	PQL	UG/L	J	RI
COPPER	0.508	J	0.500	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	0.856	J	0.500	MDL	2.00	PQL	UG/L	J	RI

Sample ID: IR12-062413-20T ***Collected:*** 6/24/2013 3:40:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.380	J	0.200	MDL	1.00	PQL	UG/L	J	RI
COPPER	0.675	J	0.500	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	0.839	J	0.500	MDL	2.00	PQL	UG/L	J	RI
VANADIUM	0.563	J	0.500	MDL	1.00	PQL	UG/L	J	RI

Method Category: **VOA**

Method: **8015B GRO** ***Matrix:*** **AQ**

SDG: **13F106**

Sample ID: IR06-062413-26 ***Collected:*** 6/24/2013 3:45:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	24	J	10	MDL	100	PQL	UG/L	J	RI

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: **13F106**

Sample ID: IR06-062413-25 ***Collected:*** 6/24/2013 3:20:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.30	J	0.20	MDL	0.50	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: VOA

Method: 8260B **Matrix: AQ**

Sample ID: IR06-062413-26 *Collected:* 6/24/2013 3:45:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHYLBENZENE	1.5	J	0.20	MDL	2.0	PQL	UG/L	J	RI
ISOPROPYLBENZENE	0.32	J	0.20	MDL	2.0	PQL	UG/L	J	RI

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

SDG: **13F118**

Sample ID: IR12-062513-05D *Collected:* 6/25/2013 7:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.282	J	0.200	MDL	0.500	PQL	MG/L	J	RI

Method Category: METALS

Method: 6020A **Matrix: AQ**

SDG: **13F118**

Sample ID: IR12-062513-05 *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES/DIS *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	21.3	J	20.0	MDL	100	PQL	UG/L	J	RI
COPPER	0.646	J	0.500	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	1.22	J	0.500	MDL	2.00	PQL	UG/L	J	RI
ZINC	15.3	J	10.0	MDL	20.0	PQL	UG/L	J	RI

Sample ID: IR12-062513-05D *Collected:* 6/25/2013 7:55:00 *Analysis Type:* RES/DIS *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	1.22	J	0.500	MDL	2.00	PQL	UG/L	J	RI
NICKEL	0.940	J	0.500	MDL	1.00	PQL	UG/L	J	RI

Sample ID: IR12-062513-05T *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	1.20	J	0.500	MDL	2.00	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **AQ**

Sample ID: IR12-062513-05TD *Collected:* 6/25/2013 7:55:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	1.23	J	0.500	MDL	2.00	PQL	UG/L	J	RI

Sample ID: IR12-062513-22 *Collected:* 6/25/2013 7:45:00 *Analysis Type:* RES/DIS *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.519	J	0.500	MDL	1.00	PQL	UG/L	J	RI
COBALT	0.225	J	0.200	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	0.610	J	0.500	MDL	2.00	PQL	UG/L	J	RI
NICKEL	0.919	J	0.500	MDL	1.00	PQL	UG/L	J	RI

Sample ID: IR12-062513-22T *Collected:* 6/25/2013 7:45:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	59.3	J	20.0	MDL	100	PQL	UG/L	J	RI
ANTIMONY	0.530	J	0.500	MDL	1.00	PQL	UG/L	J	RI
CHROMIUM	0.260	J	0.200	MDL	1.00	PQL	UG/L	J	RI
COBALT	0.244	J	0.200	MDL	1.00	PQL	UG/L	J	RI
LEAD	0.162	J	0.100	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	0.646	J	0.500	MDL	2.00	PQL	UG/L	J	RI
VANADIUM	0.566	J	0.500	MDL	1.00	PQL	UG/L	J	RI

Sample ID: IR12-062513-23 *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES/DIS *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.349	J	0.100	MDL	1.00	PQL	UG/L	J	RI
MOLYBDENUM	0.666	J	0.500	MDL	2.00	PQL	UG/L	J	RI

Sample ID: IR12-062513-23T *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.692	J	0.500	MDL	2.00	PQL	UG/L	J	RI
NICKEL	0.647	J	0.500	MDL	1.00	PQL	UG/L	J	RI
ZINC	14.2	J	10.0	MDL	20.0	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **VOA**

Method: **8015B GRO** ***Matrix:*** **AQ**

SDG: **13F118**

Sample ID: IR12-062513-05 *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	12	J	10	MDL	100	PQL	UG/L	J	RI

Sample ID: IR12-062513-05D *Collected:* 6/25/2013 7:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	11	J	10	MDL	100	PQL	UG/L	J	RI

Method Category: **VOA**

Method: **RSK-175** ***Matrix:*** **AQ**

SDG: **13F118**

Sample ID: IR12-062513-05 *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHANE	1.2	J	0.64	MDL	5.0	PQL	UG/L	J	RI

Sample ID: IR12-062513-05D *Collected:* 6/25/2013 7:55:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHANE	1.1	J	0.64	MDL	5.0	PQL	UG/L	J	RI

Sample ID: IR12-062513-23 *Collected:* 6/25/2013 7:50:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHANE	2.1	J	0.64	MDL	5.0	PQL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **AQ**

SDG: **13F131**

Sample ID: IR12-062613-28 ***Collected:*** 6/26/2013 8:40:00 ***Analysis Type:*** RES/DIS ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.32	J	1.00	LOD	5.00	LOQ	UG/L	J	RI
COBALT	1.78	J	1.00	LOD	5.00	LOQ	UG/L	J	RI
IRON	65.7	J	50.0	LOD	5000	LOQ	UG/L	J	RI
MOLYBDENUM	3.43	J	2.50	LOD	10.0	LOQ	UG/L	J	RI

Sample ID: IR12-062613-28T ***Collected:*** 6/26/2013 8:40:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	4.33	J	1.00	LOD	5.00	LOQ	UG/L	J	RI
COBALT	1.84	J	1.00	LOD	5.00	LOQ	UG/L	J	RI
IRON	97.9	J	50.0	LOD	5000	LOQ	UG/L	J	RI
MOLYBDENUM	3.61	J	2.50	LOD	10.0	LOQ	UG/L	J	RI

Sample ID: IR12-062613-29 ***Collected:*** 6/26/2013 8:45:00 ***Analysis Type:*** RES/DIS ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	61.4	J	20.0	LOD	100	LOQ	UG/L	J	RI
COBALT	0.376	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
MOLYBDENUM	1.15	J	0.500	LOD	2.00	LOQ	UG/L	J	RI
NICKEL	0.749	J	0.500	LOD	1.00	LOQ	UG/L	J	RI

Sample ID: IR12-062613-29T ***Collected:*** 6/26/2013 8:45:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	33.1	J	20.0	LOD	100	LOQ	UG/L	U	Eb
CHROMIUM	0.201	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
COBALT	0.360	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
COPPER	0.789	J	0.500	LOD	1.00	LOQ	UG/L	U	Eb
LEAD	0.392	J	0.100	LOD	1.00	LOQ	UG/L	J	RI
MOLYBDENUM	1.11	J	0.500	LOD	2.00	LOQ	UG/L	J	RI
NICKEL	0.923	J	0.500	LOD	1.00	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **AQ**

Sample ID: IR12-062613-30 ***Collected:*** 6/26/2013 8:30:00 ***Analysis Type:*** RES/DIS ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	66.2	J	20.0	LOD	100	LOQ	UG/L	J	RI
COBALT	0.776	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
IRON	666	J	10.0	LOD	1000	LOQ	UG/L	J	RI
MOLYBDENUM	1.03	J	0.500	LOD	2.00	LOQ	UG/L	J	RI

Sample ID: IR12-062613-30T ***Collected:*** 6/26/2013 8:30:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	68.7	J	20.0	LOD	100	LOQ	UG/L	U	Eb
COBALT	0.862	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
IRON	952	J	10.0	LOD	1000	LOQ	UG/L	J	RI
LEAD	0.134	J	0.100	LOD	1.00	LOQ	UG/L	J	RI
MOLYBDENUM	1.07	J	0.500	LOD	2.00	LOQ	UG/L	J	RI
ZINC	56.3		10.0	LOD	20.0	LOQ	UG/L	U	Eb

Sample ID: IR12-062613-ER ***Collected:*** 6/26/2013 11:30:00 ***Analysis Type:*** RES/DIS ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.730	J	0.500	LOD	1.00	LOQ	UG/L	U	Fb
CALCIUM	285	J	25.0	LOD	1000	LOQ	UG/L	U	Fb
MAGNESIUM	99.6	J	10.0	LOD	1000	LOQ	UG/L	U	Fb
MANGANESE	0.370	J	0.200	LOD	1.00	LOQ	UG/L	U	Fb
POTASSIUM	55.4	J	20.0	LOD	1000	LOQ	UG/L	U	Fb
SODIUM	1450		50.0	LOD	1000	LOQ	UG/L	U	Fb

Sample ID: IR12-062613-ERT ***Collected:*** 6/26/2013 11:30:00 ***Analysis Type:*** RES/TOT ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	20.2	J	20.0	LOD	100	LOQ	UG/L	U	Fb
CALCIUM	268	J	25.0	LOD	1000	LOQ	UG/L	U	Fb
COPPER	0.522	J	0.500	LOD	1.00	LOQ	UG/L	U	Fb
MAGNESIUM	91.1	J	10.0	LOD	1000	LOQ	UG/L	U	Fb
POTASSIUM	51.1	J	20.0	LOD	1000	LOQ	UG/L	U	Fb
SODIUM	1300		50.0	LOD	1000	LOQ	UG/L	U	Fb
ZINC	13.0	J	10.0	LOD	20.0	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **AQ**

Sample ID: IR12-062613-SB *Collected:* 6/26/2013 11:12:00 *Analysis Type:* RES/DIS *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.712	J	0.500	LOD	1.00	LOQ	UG/L	J	RI
CALCIUM	308	J	25.0	LOD	1000	LOQ	UG/L	J	RI
MAGNESIUM	104	J	10.0	LOD	1000	LOQ	UG/L	J	RI
MANGANESE	0.285	J	0.200	LOD	1.00	LOQ	UG/L	J	RI
POTASSIUM	56.4	J	20.0	LOD	1000	LOQ	UG/L	J	RI

Sample ID: IR12-062613-SBT *Collected:* 6/26/2013 11:12:00 *Analysis Type:* RES/TOT *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	32.5	J	20.0	LOD	100	LOQ	UG/L	J	RI
CALCIUM	252	J	25.0	LOD	1000	LOQ	UG/L	J	RI
MAGNESIUM	91.4	J	10.0	LOD	1000	LOQ	UG/L	J	RI
POTASSIUM	52.5	J	20.0	LOD	1000	LOQ	UG/L	J	RI

Method Category: **SVOA**

Method: **8015B DRO** ***Matrix:*** **AQ**

SDG: **13F131**

Sample ID: IR12-062613-29 *Collected:* 6/26/2013 8:45:00 *Analysis Type:* RES *Dilution:* 1.03

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIESEL RANGE ORGANICS	54	J	51	LOD	100	LOQ	UG/L	J	RI
MOTOR OILS	57	J	51	LOD	520	LOQ	UG/L	J	RI

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: **13F131**

Sample ID: IR12-062613-30 *Collected:* 6/26/2013 8:30:00 *Analysis Type:* RES *Dilution:* 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.21	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: Tl_Site6and12_053013**

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'EMXT'**

EDD Filename: 'Prep13F106', 'Prep13F118', 'Prep13F131' **eQAPP Name: TI_Site6and12_053013**

Reason Code Legend

Reason Code	*Description*
Eb	Equipment Blank Contamination
Fb	Field Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'TESTAME'**

EDD Filename: 'PrepRAD_13F106', 'PrepRAD_13F118', 'PrepRAD_13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **RADCHEM**

Method: **903.0 MOD** ***Matrix:*** **AQ**

SDG: **13F106**

Sample ID: IR12-062413-20 ***Collected:*** 6/24/2013 3:40:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.171		0.124	MDL	1.00	PQL	pCi/L	U	Mb

SDG: **13F118**

Sample ID: IR12-062513-05 ***Collected:*** 6/25/2013 7:50:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.187		0.0810	MDL	1.00	PQL	pCi/L	U	Mb

Sample ID: IR12-062513-22 ***Collected:*** 6/25/2013 7:45:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.188		0.0876	MDL	1.00	PQL	pCi/L	U	Mb

Sample ID: IR12-062513-23 ***Collected:*** 6/25/2013 7:50:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.160		0.0858	MDL	1.00	PQL	pCi/L	U	Mb

SDG: **13F131**

Sample ID: IR12-062613-28 ***Collected:*** 6/26/2013 8:40:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.441		0.0979	MDL	1.00	PQL	pCi/L	U	Eb

Sample ID: IR12-062613-29 ***Collected:*** 6/26/2013 8:45:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.467		0.0934	MDL	1.00	PQL	pCi/L	U	Eb

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'TESTAME'**

EDD Filename: 'PrepRAD_13F106', 'PrepRAD_13F118', 'PrepRAD_13F131' **eQAPP Name: TI_Site6and12_053013**

Method Category: **RADCHEM**

Method: **903.0 MOD** ***Matrix:*** **AQ**

Sample ID: IR12-062613-30 ***Collected:*** 6/26/2013 8:30:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.152		0.0940	MDL	1.00	PQL	pCi/L	U	Mb, Eb

Sample ID: IR12-062613-ER ***Collected:*** 6/26/2013 11:30:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.147		0.0928	MDL	1.00	PQL	pCi/L	U	Mb, Fb

Sample ID: IR12-062613-SB ***Collected:*** 6/26/2013 11:12:00 ***Analysis Type:*** RES ***Dilution:*** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Radium-226	0.115		0.0620	MDL	1.00	PQL	pCi/L	U	Mb

* denotes a non-reportable result

Project Name and Number: -

Data Qualifier Summary

Lab Reporting Batch ID: '13F106', '13F118', '13F131' **Laboratory: 'TESTAME'**

EDD Filename: 'PrepRAD_13F106', 'PrepRAD_13F118', 'PrepRAD_13F131' **eQAPP Name: TI_Site6and12_053013**

Reason Code Legend

Reason Code	*Description*
Eb	Equipment Blank Contamination
Fb	Field Blank Contamination
Mb	Method Blank Contamination

* denotes a non-reportable result

Project Name and Number: -

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

13F106/ 160-2859-1

Method Blank Outlier Report

Lab Reporting Batch ID: 13F106 **Laboratory: TESTAME**

EDD Filename: RAD_13F106 **eQAPP Name: TI_Site6and12_053013**

Method: **903.0 MOD**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 160-59169/1-A	7/26/2013 5:50:00 AM	Radium-226	0.07860 pCi/L	IR12-062413-20

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062413-20(RES)	Radium-226	0.171 pCi/L	0.171U pCi/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13F106 **Laboratory: EMXT**

EDD Filename: 13F106 **eQAPP Name: TI_Site6and12_053013**

Method: RSK-175
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
IR12-062413-20MSD (IR12-062413-20)	METHANE	-	5	10.00-160.00	-	METHANE	No Qual, >4x

Method: 6020A
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
IR12-062413-20MSD (DIS) (IR12-062413-20 IR12 -062413-20T)	CALCIUM	-	52	75.00-125.00	-	CALCIUM	No Qual, >4x
	MANGANESE	-	70	75.00-125.00	-	MANGANESE	

Reporting Limit Outliers

Lab Reporting Batch ID: 13F106 **Laboratory: EMXT**

EDD Filename: 13F106 **eQAPP Name: TI_Site6and12_053013**

Method: 6020A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062413-20	COBALT	J	0.382	1.00	PQL	UG/L	J (all detects)
	COPPER	J	0.508	1.00	PQL	UG/L	
	MOLYBDENUM	J	0.856	2.00	PQL	UG/L	
IR12-062413-20T	COBALT	J	0.380	1.00	PQL	UG/L	J (all detects)
	COPPER	J	0.675	1.00	PQL	UG/L	
	MOLYBDENUM	J	0.839	2.00	PQL	UG/L	
	VANADIUM	J	0.563	1.00	PQL	UG/L	

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR06-062413-26	GASOLINE RANGE ORGANICS	J	24	100	PQL	UG/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR06-062413-25	TRICHLOROETHENE	J	0.30	0.50	PQL	UG/L	J (all detects)
IR06-062413-26	ETHYLBENZENE	J	1.5	2.0	PQL	UG/L	J (all detects)
	ISOPROPYLBENZENE	J	0.32	2.0	PQL	UG/L	

Quality Control Outlier Reports

13F131/ 160-2861-1

Method Blank Outlier Report

Lab Reporting Batch ID: 13F131 **Laboratory: TESTAME**

EDD Filename: RAD_13F131 **eQAPP Name: TI_Site6and12_053013**

Method: **903.0 MOD**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 160-59169/1-A	7/26/2013 5:50:00 AM	Radium-226	0.07860 pCi/L	IR12-062613-28 IR12-062613-29 IR12-062613-30 IR12-062613-ER IR12-062613-SB

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062613-30(RES)	Radium-226	0.152 pCi/L	0.152U pCi/L
IR12-062613-ER(RES)	Radium-226	0.147 pCi/L	0.147U pCi/L
IR12-062613-SB(RES)	Radium-226	0.115 pCi/L	0.115U pCi/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 13F131 **Laboratory: EMXT**

EDD Filename: 13F131 **eQAPP Name: TI_Site6and12_053013**

Method: **6020A**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR12-062613-ERT (RES/TOT)	6/26/2013 11:30:00 AM	ALUMINUM CALCIUM COPPER MAGNESIUM POTASSIUM SODIUM ZINC	20.2 UG/L 268 UG/L 0.522 UG/L 91.1 UG/L 51.1 UG/L 1300 UG/L 13 UG/L	IR12-062613-28T IR12-062613-29T IR12-062613-30T

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062613-29T(RES/TOT)	ALUMINUM	33.1 UG/L	33.1U UG/L
IR12-062613-29T(RES/TOT)	COPPER	0.789 UG/L	0.789U UG/L
IR12-062613-30T(RES/TOT)	ALUMINUM	68.7 UG/L	68.7U UG/L
IR12-062613-30T(RES/TOT)	ZINC	56.3 UG/L	56.3U UG/L

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 13F131 **Laboratory: TESTAME**

EDD Filename: RAD_13F131 **eQAPP Name: TI_Site6and12_053013**

Method: **903.0 MOD**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR12-062613-ER(RES)	6/26/2013 11:30:00 AM	Radium-226	0.147 pCi/L	IR12-062613-28 IR12-062613-29 IR12-062613-30

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062613-28(RES)	Radium-226	0.441 pCi/L	0.441U pCi/L
IR12-062613-29(RES)	Radium-226	0.467 pCi/L	0.467U pCi/L
IR12-062613-30(RES)	Radium-226	0.152 pCi/L	0.152U pCi/L

Field Blank Outlier Report

Lab Reporting Batch ID: 13F131 **Laboratory: EMXT**

EDD Filename: 13F131 **eQAPP Name: TI_Site6and12_053013**

Method: **6020A**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR12-062613-SB(RES/DIS)	6/26/2013 11:12:00 AM	BARIUM CALCIUM MAGNESIUM MANGANESE POTASSIUM SODIUM	0.712 UG/L 308 UG/L 104 UG/L 0.285 UG/L 56.4 UG/L 1570 UG/L	IR12-062613-ER
IR12-062613-SBT (RES/TOT)	6/26/2013 11:12:00 AM	ALUMINUM CALCIUM COPPER MAGNESIUM POTASSIUM SODIUM	32.5 UG/L 252 UG/L 1.01 UG/L 91.4 UG/L 52.5 UG/L 1300 UG/L	IR12-062613-ERT

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062613-ERT(RES/TOT)	ALUMINUM	20.2 UG/L	20.2U UG/L
IR12-062613-ERT(RES/TOT)	CALCIUM	268 UG/L	268U UG/L
IR12-062613-ERT(RES/TOT)	COPPER	0.522 UG/L	0.522U UG/L
IR12-062613-ERT(RES/TOT)	MAGNESIUM	91.1 UG/L	91.1U UG/L
IR12-062613-ERT(RES/TOT)	POTASSIUM	51.1 UG/L	51.1U UG/L
IR12-062613-ERT(RES/TOT)	SODIUM	1300 UG/L	1300U UG/L

Field Blank Outlier Report

Lab Reporting Batch ID: 13F131 **Laboratory: TESTAME**

EDD Filename: RAD_13F131 **eQAPP Name: TI_Site6and12_053013**

Method: **903.0 MOD**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR12-062613-SB(RES)	6/26/2013 11:12:00 AM	Radium-226	0.115 pCi/L	IR12-062613-ER

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062613-ER(RES)	Radium-226	0.147 pCi/L	0.147U pCi/L

Reporting Limit Outliers

Lab Reporting Batch ID: 13F131 **Laboratory: EMXT**

EDD Filename: 13F131 **eQAPP Name: TI_Site6and12_053013**

***Method:* 6020A**

***Matrix:* AQ**

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062613-28	ARSENIC	J	4.32	5.00	LOQ	UG/L	J (all detects)
	COBALT	J	1.78	5.00	LOQ	UG/L	
	IRON	J	65.7	5000	LOQ	UG/L	
	MOLYBDENUM	J	3.43	10.0	LOQ	UG/L	
IR12-062613-28T	ARSENIC	J	4.33	5.00	LOQ	UG/L	J (all detects)
	COBALT	J	1.84	5.00	LOQ	UG/L	
	IRON	J	97.9	5000	LOQ	UG/L	
	MOLYBDENUM	J	3.61	10.0	LOQ	UG/L	
IR12-062613-29	ALUMINUM	J	61.4	100	LOQ	UG/L	J (all detects)
	COBALT	J	0.376	1.00	LOQ	UG/L	
	MOLYBDENUM	J	1.15	2.00	LOQ	UG/L	
	NICKEL	J	0.749	1.00	LOQ	UG/L	
IR12-062613-29T	ALUMINUM	J	33.1	100	LOQ	UG/L	J (all detects)
	CHROMIUM	J	0.201	1.00	LOQ	UG/L	
	COBALT	J	0.360	1.00	LOQ	UG/L	
	COPPER	J	0.789	1.00	LOQ	UG/L	
	LEAD	J	0.392	1.00	LOQ	UG/L	
	MOLYBDENUM	J	1.11	2.00	LOQ	UG/L	
	NICKEL	J	0.923	1.00	LOQ	UG/L	
IR12-062613-30	ALUMINUM	J	66.2	100	LOQ	UG/L	J (all detects)
	COBALT	J	0.776	1.00	LOQ	UG/L	
	IRON	J	666	1000	LOQ	UG/L	
	MOLYBDENUM	J	1.03	2.00	LOQ	UG/L	
IR12-062613-30T	ALUMINUM	J	68.7	100	LOQ	UG/L	J (all detects)
	COBALT	J	0.862	1.00	LOQ	UG/L	
	IRON	J	952	1000	LOQ	UG/L	
	LEAD	J	0.134	1.00	LOQ	UG/L	
	MOLYBDENUM	J	1.07	2.00	LOQ	UG/L	
IR12-062613-ER	BARIUM	J	0.730	1.00	LOQ	UG/L	J (all detects)
	CALCIUM	J	285	1000	LOQ	UG/L	
	MAGNESIUM	J	99.6	1000	LOQ	UG/L	
	MANGANESE	J	0.370	1.00	LOQ	UG/L	
	POTASSIUM	J	55.4	1000	LOQ	UG/L	
IR12-062613-ERT	ALUMINUM	J	20.2	100	LOQ	UG/L	J (all detects)
	CALCIUM	J	268	1000	LOQ	UG/L	
	COPPER	J	0.522	1.00	LOQ	UG/L	
	MAGNESIUM	J	91.1	1000	LOQ	UG/L	
	POTASSIUM	J	51.1	1000	LOQ	UG/L	
	ZINC	J	13.0	20.0	LOQ	UG/L	
IR12-062613-SB	BARIUM	J	0.712	1.00	LOQ	UG/L	J (all detects)
	CALCIUM	J	308	1000	LOQ	UG/L	
	MAGNESIUM	J	104	1000	LOQ	UG/L	
	MANGANESE	J	0.285	1.00	LOQ	UG/L	
	POTASSIUM	J	56.4	1000	LOQ	UG/L	
IR12-062613-SBT	ALUMINUM	J	32.5	100	LOQ	UG/L	J (all detects)
	CALCIUM	J	252	1000	LOQ	UG/L	
	MAGNESIUM	J	91.4	1000	LOQ	UG/L	
	POTASSIUM	J	52.5	1000	LOQ	UG/L	

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Reporting Limit Outliers

Lab Reporting Batch ID: 13F131 **Laboratory: EMXT**

EDD Filename: 13F131 **eQAPP Name: TI_Site6and12_053013**

Method: 8015B DRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062613-29	DIESEL RANGE ORGANICS	J	54	100	LOQ	UG/L	J (all detects)
	MOTOR OILS	J	57	520	LOQ	UG/L	

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062613-30	CHLOROFORM	J	0.21	0.50	LOQ	UG/L	J (all detects)

Quality Control Outlier Reports

13F118/ 160-2860-1

Method Blank Outlier Report

Lab Reporting Batch ID: 13F118 **Laboratory: TESTAME**

EDD Filename: RAD_13F118 **eQAPP Name: TI_Site6and12_053013**

Method: **903.0 MOD**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 160-59169/1-A	7/26/2013 5:50:00 AM	Radium-226	0.07860 pCi/L	IR12-062513-05 IR12-062513-05D IR12-062513-22 IR12-062513-23

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
IR12-062513-05(RES)	Radium-226	0.187 pCi/L	0.187U pCi/L
IR12-062513-22(RES)	Radium-226	0.188 pCi/L	0.188U pCi/L
IR12-062513-23(RES)	Radium-226	0.160 pCi/L	0.160U pCi/L

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13F118 **Laboratory: EMXT**

EDD Filename: 13F118 **eQAPP Name: TI_Site6and12_053013**

***Method:* 6020A**
***Matrix:* AQ**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
IR12-062513-05TDMS (TOT)	CALCIUM	170	169	75.00-125.00	-	CALCIUM	
IR12-062513-05TDMSD (TOT)	MANGANESE	209	189	75.00-125.00	-	MANGANESE	
(IR12-062513-05	SODIUM	136	129	75.00-125.00	-	SODIUM	
IR12-062513-05D							
IR12-062513-05T							
IR12-062513-05TD							No Qual, >4x
IR12-062513-22							
IR12-062513-22T							
IR12-062513-23							
IR12-062513-23T)							

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Reporting Limit Outliers

Lab Reporting Batch ID: 13F118 **Laboratory: EMXT**

EDD Filename: 13F118 **eQAPP Name: TI_Site6and12_053013**

Method: 300.0
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062513-05D	SULFATE	J	0.282	0.500	PQL	MG/L	J (all detects)

Method: 6020A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062513-05	ALUMINUM	J	21.3	100	PQL	UG/L	J (all detects)
	COPPER	J	0.646	1.00	PQL	UG/L	
	MOLYBDENUM	J	1.22	2.00	PQL	UG/L	
	ZINC	J	15.3	20.0	PQL	UG/L	
IR12-062513-05D	MOLYBDENUM	J	1.22	2.00	PQL	UG/L	J (all detects)
	NICKEL	J	0.940	1.00	PQL	UG/L	
IR12-062513-05T	MOLYBDENUM	J	1.20	2.00	PQL	UG/L	J (all detects)
IR12-062513-05TD	MOLYBDENUM	J	1.23	2.00	PQL	UG/L	J (all detects)
IR12-062513-22	ANTIMONY	J	0.519	1.00	PQL	UG/L	J (all detects)
	COBALT	J	0.225	1.00	PQL	UG/L	
	MOLYBDENUM	J	0.610	2.00	PQL	UG/L	
	NICKEL	J	0.919	1.00	PQL	UG/L	
IR12-062513-22T	ALUMINUM	J	59.3	100	PQL	UG/L	J (all detects)
	ANTIMONY	J	0.530	1.00	PQL	UG/L	
	CHROMIUM	J	0.260	1.00	PQL	UG/L	
	COBALT	J	0.244	1.00	PQL	UG/L	
	LEAD	J	0.162	1.00	PQL	UG/L	
	MOLYBDENUM	J	0.646	2.00	PQL	UG/L	
	VANADIUM	J	0.566	1.00	PQL	UG/L	
IR12-062513-23	LEAD	J	0.349	1.00	PQL	UG/L	J (all detects)
	MOLYBDENUM	J	0.666	2.00	PQL	UG/L	
IR12-062513-23T	MOLYBDENUM	J	0.692	2.00	PQL	UG/L	J (all detects)
	NICKEL	J	0.647	1.00	PQL	UG/L	
	ZINC	J	14.2	20.0	PQL	UG/L	

Method: 8015B GRO
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
IR12-062513-05	GASOLINE RANGE ORGANICS	J	12	100	PQL	UG/L	J (all detects)
IR12-062513-05D	GASOLINE RANGE ORGANICS	J	11	100	PQL	UG/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 13F118 **Laboratory: EMXT**

EDD Filename: 13F118 **eQAPP Name: TI_Site6and12_053013**

Method: **RSK-175**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
IR12-062513-05	ETHANE	J	1.2	5.0	PQL	UG/L	J (all detects)
IR12-062513-05D	ETHANE	J	1.1	5.0	PQL	UG/L	J (all detects)
IR12-062513-23	ETHANE	J	2.1	5.0	PQL	UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13F118 **Laboratory: EMXT**

EDD Filename: 13F118 **eQAPP Name: TI_Site6and12_053013**

Method: 160.1
Matrix: AQ

Analyte	Concentration (MG/L) IR12-062513-05	Concentration (MG/L) IR12-062513-05D	Sample RPD	eQAPP RPD	Flag
TOTAL DISSOLVED SOLIDS	432	420	3	30.00	No Qualifiers Applied

Method: 160.2
Matrix: AQ

Analyte	Concentration (MG/L) IR12-062513-05	Concentration (MG/L) IR12-062513-05D	Sample RPD	eQAPP RPD	Flag
SUSPENDED SOLIDS	16	16	0	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (MG/L) IR12-062513-05	Concentration (MG/L) IR12-062513-05D	Sample RPD	eQAPP RPD	Flag
CHLORIDE	29.0	28.5	2	30.00	No Qualifiers Applied
SULFATE	0.504	0.282	56	30.00	

Method: 6020A
Matrix: AQ

Analyte	Concentration (UG/L) IR12-062513-05 (DIS)	Concentration (UG/L) IR12-062513-05D (DIS)	Sample RPD	eQAPP RPD	Flag
ALUMINUM	21.3	100 U	200	30.00	No Qualifiers Applied
ARSENIC	131	132	1	30.00	
BARIUM	18.4	17.7	4	30.00	
CALCIUM	78500	78000	1	30.00	
COPPER	0.646	1.00 U	200	30.00	
IRON	9400	9360	0	30.00	
MAGNESIUM	16700	16700	0	30.00	
MANGANESE	979	981	0	30.00	
MOLYBDENUM	1.22	1.22	0	30.00	
NICKEL	1.00 U	0.940	200	30.00	
POTASSIUM	16700	16700	0	30.00	
SODIUM	31200	30300	3	30.00	
ZINC	15.3	20.0 U	200	30.00	

Analyte	Concentration (UG/L) IR12-062513-05T (TOT)	Concentration (UG/L) IR12-062513-05TD (TOT)	Sample RPD	eQAPP RPD	Flag
ARSENIC	132	133	1	30.00	No Qualifiers Applied
BARIUM	19.0	19.0	0	30.00	
CALCIUM	78000	77300	1	30.00	
IRON	9730	9610	1	30.00	
MAGNESIUM	16400	16300	1	30.00	
MANGANESE	983	989	1	30.00	
MOLYBDENUM	1.20	1.23	2	30.00	
POTASSIUM	16400	16400	0	30.00	
SODIUM	30200	29700	2	30.00	

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Field Duplicate RPD Report

Lab Reporting Batch ID: 13F118 **Laboratory: EMXT**

EDD Filename: 13F118 **eQAPP Name: TI_Site6and12_053013**

Method: 8015B DRO
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	IR12-062513-05	IR12-062513-05D			
DIESEL RANGE ORGANICS	670	720	7	30.00	No Qualifiers Applied

Method: 8015B GRO
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	IR12-062513-05	IR12-062513-05D			
GASOLINE RANGE ORGANICS	12	11	9	30.00	No Qualifiers Applied

Method: RSK-175
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	IR12-062513-05	IR12-062513-05D			
ETHANE	1.2	1.1	9	30.00	No Qualifiers Applied
METHANE	8400	8800	5	30.00	

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	August 23, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F131

Sample Identification

IR12-062613-28

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample IR12-062613-TB1 was identified as a trip blank. No volatile contaminants were found.

Sample IR12-062613-ER was identified as an equipment rinsate. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13F131	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Volatiles - Data Qualification Summary - SDG 13F131

SDG	Sample	Compound	Flag	A or P	Reason
13F131	IR12-062613-28	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Volatiles - Field Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	August 20, 2013
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F131

Sample Identification

IR12-062613-28T
IR12-062613-28

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020A and 7470A for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Sodium	57.8 ug/L	IR12-062613-28

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Samples IR12-062613-ERT and IR12-062613-ER were identified as equipment rinsates. No metal contaminants were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
IR12-062613-ERT	6/26/13	Aluminum Calcium Copper Magnesium Potassium Sodium Zinc	20.2 ug/L 268 ug/L 0.522 ug/L 91.1 ug/L 51.1 ug/L 1300 ug/L 13.0 ug/L	IR12-062613-28T

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
IR12-062613-ER	6/26/13	Barium Calcium Magnesium Manganese Potassium Sodium	0.730 ug/L 285 ug/L 99.6 ug/L 0.370 ug/L 55.4 ug/L 1450 ug/L	IR12-062613-28

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13F131	All analytes reported below the RL and above the MDL.	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Metals - Data Qualification Summary - SDG 13F131

SDG	Sample	Analyte	Flag	A or P	Reason
13F131	IR12-062613-28T IR12-062613-28	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Metals - Laboratory Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Metals - Field Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	August 20, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F131

Sample Identification

IR12-062613-28

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 160.1 for Total Dissolved Solids and EPA Method 160.2 for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample IR12-062613-ER was identified as an equipment rinsate. No contaminant concentrations were found.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13F131	All analytes reported below the RL and above the MDL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Data Qualification Summary - SDG 13F131

SDG	Sample	Compound	Flag	A or P	Reason
13F131	IR12-062613-28	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	August 23, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F131

Sample Identification

IR12-062613-28

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample IR12-062613-TB1 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

Sample IR12-062613-ER was identified as an equipment rinsate. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13F131	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable for samples.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 13F131

SDG	Sample	Compound	Flag	A or P	Reason
13F131	IR12-062613-28	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 13F131

No Sample Data Qualified in this SDG

LDC Report# 30241B8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	September 12, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F131

Sample Identification

IR12-062613-28

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

Sample IR12-062613-ER was identified as an equipment rinsate. No total petroleum hydrocarbons as extractable contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13G131	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 13G131

SDG	Sample	Compound	Flag	A or P	Reason
13G131	IR12-062613-28	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 13G131

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 13G131

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 26, 2013
LDC Report Date:	August 20, 2013
Matrix:	Water
Parameters:	Radium-226
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc./TestAmerica, Inc.
Sample Delivery Group (SDG):	13F131/160-2861-1

Sample Identification

IR12-062613-28

Introduction

This data review covers one water sample listed on the cover sheet. The analyses were per EPA Method 903.0 for Radium-226.

This review follows the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration were met.

Detector efficiency was determined for each radionuclide of interest.

III. Continuing Calibration

Calibration verification and background determination was performed at the required frequencies.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA) with the following exceptions:

Method Blank ID	Isotope	Activity	Associated Samples
PB (prep blank)	Radium-226	0.07860 pCi/L	All samples in SDG 13F131/160-2861-1

Sample activities were compared to activities detected in the method blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated method blanks.

Sample IR12-062613-ER was identified as an equipment rinsate. No radium-226 was found with the following exceptions:

Blank ID	Sampling Date	Isotope	Activity	Associated Samples
IR12-062613-ER	6/26/13	Radium-226	0.147 pCi/L	IR12-062613-28

Sample activities were compared to activities detected in the field blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated field blanks with the following exceptions:

Sample	Isotope	Reported Activity	Modified Final Activity
IR12-062613-28	Radium-226	0.441 pCi/L	0.441U pCi/L

V. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Carrier Recovery

All carrier recoveries were within validation criteria.

VIII. Sample Result Verification

All sample result verifications were acceptable.

IX. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Radium-226 - Data Qualification Summary - SDG 13F131/160-2861-1

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Radium-226 - Laboratory Blank Data Qualification Summary - SDG 13F131/160-2861-1

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Radium-226 - Field Blank Data Qualification Summary - SDG 13F131/160-2861-1

SDG	Sample	Isotope	Modified Final Activity	A or P
13F131/160-2861-1	IR12-062613-28	Radium-226	0.441U pCi/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 9, 2013
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F118

Sample Identification

IR12-062513-22

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6020A and 7470A for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

XII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13F118	All analytes reported below the RL and above the MDL.	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Metals - Data Qualification Summary - SDG 13F118

SDG	Sample	Analyte	Flag	A or P	Reason
13F118	IR12-062513-22	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Metals - Laboratory Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Metals - Field Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 9, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F118

Sample Identification

IR12-062513-22

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 160.1 for Total Dissolved Solids, EPA Method 160.2 for Total Suspended Solids, EPA 300.0 for Chloride and Sulfate, EPA 353.3 for Nitrate as N, and EPA 376.1 for Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13F118	All analytes reported below the RL and above the MDL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Data Qualification Summary - SDG 13F118

SDG	Sample	Compound	Flag	A or P	Reason
13F118	IR12-062513-22	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 10, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F118

Sample Identification

IR12-062513-22

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample IR12-062513-TB1 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13F118	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 13F118

SDG	Sample	Compound	Flag	A or P	Reason
13F118	IR12-062513-22	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 12, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F118

Sample Identification

IR12-062513-22

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

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NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitation were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13G118	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 13G118

SDG	Sample	Compound	Flag	A or P	Reason
13G118	IR12-062513-22	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 13G118

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 13G118

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 9, 2013
Matrix:	Water
Parameters:	Radium-226
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc./TestAmerica, Inc.
Sample Delivery Group (SDG):	13F118/160-2860-1

Sample Identification

IR12-062513-22

Introduction

This data review covers one water sample listed on the cover sheet. The analyses were per EPA Method 903.0 for Radium-226.

This review follows the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

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U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration were met.

Detector efficiency was determined for each radionuclide of interest.

III. Continuing Calibration

Calibration verification and background determination was performed at the required frequencies.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. Blank results contained less than the minimum detectable activity (MDA) with the following exceptions:

Method Blank ID	Isotope	Activity	Associated Samples
PB (prep blank)	Radium-226	0.07860 pCi/L	All samples in SDG 13F118/160-2860-1

Sample activities were compared to activities detected in the method blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated method blanks with the following exceptions:

Sample	Isotope	Reported Activity	Modified Final Activity
IR12-062513-22	Radium-226	0.188 pCi/L	0.188U pCi/L

No field blanks were identified in this SDG.

V. Matrix Spike/(Matrix Spike) Duplicates

A matrix spike (MS) analysis was not required by the method.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Carrier Recovery

All carrier recoveries were within validation criteria.

VIII. Sample Result Verification

All sample result verifications were acceptable.

IX. Minimum Detectable Activity

All minimum detectable activities met required detection limits.

X. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Radium-226 - Data Qualification Summary - SDG 13F118/160-2860-1

SDG	Sample	Analyte	Flag	A or P	Reason
13F118/ 60-2860-1	IR12-062513-22	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Radium-226 - Laboratory Blank Data Qualification Summary - SDG 13F118/160-2860-1

SDG	Sample	Isotope	Modified Final Activity	A or P
13F118/ 60-2860-1	IR12-062513-22	Radium-226	0.188U pCi/L	A

Treasure Island, IR Sites 6 & 12
Radium-226 - Field Blank Data Qualification Summary - SDG 13F118/160-2860-1

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	June 25, 2013
LDC Report Date:	September 11, 2013
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13F118

Sample Identification

IR12-062513-22
IR12-062513-22DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitation were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
IR12-062513-22	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13F118	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
IR12-062513-22	Methane	X	A
IR12-062513-22DL	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13F118

SDG	Sample	Compound	Flag	A or P	Reason
13F118	IR12-062513-22	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13F118	IR12-062513-22 IR12-062513-22DL	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13F118	IR12-062513-22	Methane	X	A	Overall assessment of data
13F118	IR12-062513-22DL	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13F118

No Sample Data Qualified in this SDG

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND IR 6&12**

SDG: **13I136**

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WET	METHOD 300.0 METHOD 353.3 METHOD SM2320B METHOD 376.1	8000 – 8047 8048 – 8054 8055 – 8065 8066 – 8070
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** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 10-21-2013
EMAX Batch No.: 131136

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego CA 92126

Subject: Laboratory Report
Project: Treasure Island IR 6&12

Enclosed is the Laboratory report for samples received on 09/17/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
091613-TB-01	I136-01	09/16/13	WATER	VOLATILE ORGANICS BY GC/MS
				TPH GASOLINE
06-MW25-091613	I136-02	09/16/13	WATER	VOLATILE ORGANICS BY GC/MS
				ANIONS BY IC
				SULFIDE
				DISSOLVED GAS
				TPH DIESEL & MOTOR OIL
				TPH GASOLINE
				NITRATE-N
				ALKALINITY
06-MW25-091613D	I136-03	09/16/13	WATER	VOLATILE ORGANICS BY GC/MS
				ANIONS BY IC
				SULFIDE
				DISSOLVED GAS
				TPH DIESEL & MOTOR OIL
				TPH GASOLINE
				NITRATE-N
				ALKALINITY
06-MW26-091613	I136-04	09/16/13	WATER	VOLATILE ORGANICS BY GC/MS

Sample ID	Control #	Col Date	Matrix	Analysis
				ANIONS BY IC
				SULFIDE
				DISSOLVED GAS
				TPH DIESEL & MOTOR OIL
				TPH GASOLINE
				NITRATE-N
				ALKALINITY

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

COC NUMBER 091613-1

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Basewide Monitoring	Send Invoice to Trevet
PROJECT LOCATION	PROJECT NO.
NAVSTA Treasure Island	A111
SAMPLER NAME	AIRBILL NUMBER
Justin Mercer	
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
Gerald Tamashiro - TREVET	(714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13I136

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	* VOCs (EPA 8260B) Site 6 list	** VOCs (EPA 8260B) Site 12 list	VOCs (EPA 8260B) Sites 21&24 list	TPH-P and TPH-E (EPA 8015B)	Dissolved gasses (RSK-175)	Metals/mercury (EPA 6020/7470)	Ra-226 (EPA 903)	Sulfate (EPA 300.0)	Alkalinity (SM 2320B)	Chloride (EPA 300.0)	Nitrate (SM 4500NO3E)	Sulfide (SM 4500S2D)	TDS, TSS (SM 2540C/D)			COMMENTS
1	091613-TB-01	9/16/13	0900	3	X		W	10 day	X			X												Trip Blank; VOCs & TPH-P only
2	06-MW25-091613	9/16/13	1035	13		X	W	10 day	X			X	X			X	X	X	X	X				06-MW25
3	06-MW25-091613D	9/16/13	1040	13	X		W	10 day	X			X	X			X	X	X	X	X				06-MW25 DUP
4	06-MW26-091613	9/16/13	0940	13	X		W	10 day	X			X	X			X	X	X	X	X				06-MW26

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
Justin Mercer	9/16/13	
COMPANY: Trevet	TIME: 1400	COMPANY
RELINQUISHED BY (Signature)	DATE: 9/17/13	RECEIVED BY (Signature)
COMPANY	TIME: 0915	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

** VOC list includes naphthalene

10 Day TAT

* 48 hour hold time for Nitrate

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 3.8°C SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:

1502

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	
☑ Fedex ☐ UPS ☐ GSO ☐ Others	8034 4893 6116	ECN 13F136
☐ EMAX Courier ☐ Client Delivery		Recipient Graver
		Date 9/17/13 Time 09:15

COC Inspection

☐ Client Name	☐ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected		☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.8 °C	☐ Cooler 2 °C	☐ Cooler 3 °C	☐ Cooler 4 °C	☐ Cooler 5 °C
	☐ Cooler 6 °C	☐ Cooler 7 °C	☐ Cooler 8 °C	☐ Cooler 9 °C	☐ Cooler 10 °C
Thermometer:	*A - S/N 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling [illegible] Date 9/17/13 & 9/17/13

SRF [illegible] Date 9/18/13

PM LP for YG Date 9/19/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with latest sampling date and 1 minute past the time of the last sample collected on the same date.
H1	

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

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FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8034 4893 6116

Form ID No. 0200 24714 x 14 MT

1 From

Date 9/16/13 [redacted]

Sender's Name Trevet - Justin Mercier Phone 858 877-8056

Company Trevet

Address 9888 Carroll Centre Rd

Dept./Floor/Suite/Room

City San Diego State CA ZIP 92126

2 Your Internal Billing Reference

3 To

Recipient's Name Emax Phone 310618-8889

Company Sample Recieving

Address 1835 W 205th St

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8034 4893 6116

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☑ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

☑ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 ___ x ___ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☑ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Obtain recip. Acct. No. ☐

[redacted]

Total Packages ___ Total Weight 60 lbs. [redacted] Credit Card Auth.

Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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1 of 1

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR 6&12

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 13I136

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of four (4) water samples were received on 09/17/13 for Volatile Organics by GC/MS analysis, Method 5030B/8260B in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VO01I26L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : TREVET
Project : TREASURE ISLAND IR 6&12

SDG NO. : 13I136
Instrument ID : T-001

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V001I26B	1	NA	09/27/1318:04	09/27/1318:04	RIV618	RIV072	V001I26	Method Blank
LCS1W	V001I26L	1	NA	09/27/1316:34	09/27/1316:34	RIV615	RIV072	V001I26	Lab Control Sample (LCS)
LCD1W	V001I26C	1	NA	09/27/1317:03	09/27/1317:03	RIV616	RIV072	V001I26	LCS Duplicate
091613-TB-01	I136-01	1	NA	09/27/1318:38	09/27/1318:38	RIV619	RIV072	V001I26	Field Sample
06-MW25-091613	I136-02	1	NA	09/27/1319:41	09/27/1319:41	RIV621	RIV072	V001I26	Field Sample
06-MW25-091613D	I136-03	1	NA	09/27/1320:13	09/27/1320:13	RIV622	RIV072	V001I26	Field Sample
06-MW26-091613	I136-04	1	NA	09/27/1320:42	09/27/1320:42	RIV623	RIV072	V001I26	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/27/13 18:38
Sample ID:	091613-TB-01	Date Analyzed:	09/27/13 18:38
Lab Samp ID:	I136-01	Dilution Factor:	1
Lab File ID:	RIV619	Matrix	: WATER
Ext Btch ID:	V001I26	% Moisture	: NA
Calib. Ref.:	RIV072	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.01	10.00	90.1	70-140
4-BROMOFLUOROBENZENE	9.74	10.00	97.4	70-130
TOLUENE-D8	8.94	10.00	89.4	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/27/13 19:41
Sample ID:	06-MW25-091613	Date Analyzed:	09/27/13 19:41
Lab Samp ID:	I136-02	Dilution Factor:	1
Lab File ID:	RIV621	Matrix	: WATER
Ext Btch ID:	V001I26	% Moisture	: NA
Calib. Ref.:	RIV072	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	0.88	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	0.21J	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.15	10.00	91.5	70-140
4-BROMOFLUOROBENZENE	9.87	10.00	98.7	70-130
TOLUENE-D8	8.78	10.00	87.8	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/27/13 20:13
Sample ID:	06-MW25-091613D	Date Analyzed:	09/27/13 20:13
Lab Samp ID:	I136-03	Dilution Factor:	1
Lab File ID:	RIV622	Matrix :	WATER
Ext Btch ID:	V001I26	% Moisture :	NA
Calib. Ref.:	RIV072	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	0.93	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	0.24J	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.26	10.00	92.6	70-140
4-BROMOFLUOROBENZENE	9.61	10.00	96.1	70-130
TOLUENE-D8	8.87	10.00	88.7	70-140

RL: Reporting Limit

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/27/13 20:42
Sample ID:	06-MW26-091613	Date Analyzed:	09/27/13 20:42
Lab Samp ID:	I136-04	Dilution Factor:	1
Lab File ID:	RIV623	Matrix :	WATER
Ext Btch ID:	V001I26	% Moisture :	NA
Calib. Ref.:	RIV072	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	0.23J	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	1.8J	2.0	0.20
ISOPROPYL BENZENE	0.54J	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	0.22J	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	2.4	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	2.4	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.22	10.00	92.2	70-140
4-BROMOFLUOROBENZENE	9.87	10.00	98.7	70-130
TOLUENE-D8	8.78	10.00	87.8	70-140

RL: Reporting Limit

QC SUMMARIES

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 09/27/13
Batch No. : 13I136	Date Extracted: 09/27/13 18:04
Sample ID: MBLK1W	Date Analyzed: 09/27/13 18:04
Lab Samp ID: V001I26B	Dilution Factor: 1
Lab File ID: RIV618	Matrix : WATER
Ext Btch ID: V001I26	% Moisture : NA
Calib. Ref.: RIV072	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHANE	ND	0.50	0.20
1,1-DICHLOROETHENE	ND	0.50	0.20
1,2,3-TRICHLOROBENZENE	ND	2.0	0.30
1,2,4-TRICHLOROBENZENE	ND	2.0	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.20
1,2-DICHLOROETHANE	ND	0.50	0.20
1,2-DICHLOROPROPANE	ND	2.0	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.20
2-BUTANONE	ND	10	4.0
2-HEXANONE	ND	10	4.0
4-METHYL-2-PENTANONE	ND	20	4.0
ACETONE	ND	10	5.0
BENZENE	ND	0.50	0.20
BROMOCHLOROMETHANE	ND	0.50	0.20
BROMODICHLOROMETHANE	ND	0.50	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.30
CARBON DISULFIDE	ND	0.50	0.20
CARBON TETRACHLORIDE	ND	0.50	0.20
CHLOROBENZENE	ND	0.50	0.20
CHLOROETHANE	ND	0.50	0.30
CHLOROFORM	ND	0.50	0.20
CHLOROMETHANE	ND	0.50	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.20
ETHYLBENZENE	ND	2.0	0.20
ISOPROPYL BENZENE	ND	2.0	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.20
METHYLENE CHLORIDE	ND	2.0	0.50
STYRENE	ND	0.50	0.20
TETRACHLOROETHENE	ND	0.50	0.20
TOLUENE	ND	0.50	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.20
TRICHLOROETHENE	ND	0.50	0.20
VINYL ACETATE	ND	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.20
M- AND P-XYLENE	ND	2.0	0.40
O-XYLENE	ND	0.50	0.20
XYLENES (TOTAL)	ND	2.0	0.20
NAPHTHALENE	ND	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.95	10.00	89.5	70-140
4-BROMOFLUOROBENZENE	9.72	10.00	97.2	70-130
TOLUENE-D8	8.82	10.00	88.2	70-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 13I136
METHOD: METHOD 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V001I26B	V001I26L	V001I26C		
LAB FILE ID:	RIV618	RIV615	RIV616		
DATE EXTRACTED:	09/27/1318:04	09/27/1316:34	09/27/1317:03	DATE COLLECTED:	NA
DATE ANALYZED:	09/27/1318:04	09/27/1316:34	09/27/1317:03	DATE RECEIVED:	09/27/13
PREP. BATCH:	V001I26	V001I26	V001I26		
CALIB. REF:	RIV072	RIV072	RIV072		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.74	97	10.0	10.2	102	4	70-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	11.6	116	10.0	12.0	120	3	70-130	30
1,1,2-Trichloroethane	ND	10.0	10.8	108	10.0	11.1	111	3	70-130	30
1,1-Dichloroethane	ND	10.0	10.6	106	10.0	11.0	110	3	70-130	30
1,1-Dichloroethene	ND	10.0	9.19	92	10.0	9.43	94	3	60-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.4	104	10.0	9.95	100	5	60-130	30
1,2,4-Trichlorobenzene	ND	10.0	11.6	116	10.0	11.2	112	3	60-140	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.6	106	10.0	10.6	106	1	60-130	30
1,2-Dichlorobenzene	ND	10.0	11.1	111	10.0	11.5	115	4	70-130	30
1,2-Dichloroethane	ND	10.0	10.1	101	10.0	10.5	105	3	70-130	30
1,2-Dichloropropane	ND	10.0	11.3	113	10.0	11.9	119	4	70-130	30
1,3-Dichlorobenzene	ND	10.0	11.3	113	10.0	11.7	117	4	70-130	30
1,4-Dichlorobenzene	ND	10.0	11.0	110	10.0	11.5	115	4	70-130	30
2-Butanone	ND	50.0	54.3	109	50.0	57.8	116	6	60-140	30
2-Hexanone	ND	50.0	50.3	101	50.0	55.0	110	9	70-140	30
4-Methyl-2-Pentanone	ND	50.0	54.5	109	50.0	58.2	116	6	60-140	30
Acetone	ND	50.0	51.7	103	50.0	52.3	105	1	50-150	30
Benzene	ND	10.0	10.1	101	10.0	10.6	106	5	70-130	30
Bromochloromethane	ND	10.0	10.8	108	10.0	11.8	118	9	70-130	30
Bromodichloromethane	ND	10.0	10.3	103	10.0	10.7	107	4	70-130	30
Bromoform	ND	10.0	9.98	100	10.0	10.3	103	4	60-140	30
Bromomethane	ND	10.0	10.9	109	10.0	10.8	108	1	50-140	30
Carbon Disulfide	ND	10.0	9.13	91	10.0	9.86	99	8	50-140	30
Carbon Tetrachloride	ND	10.0	9.94	99	10.0	10.1	101	2	70-130	30
Chlorobenzene	ND	10.0	10.5	105	10.0	10.8	108	3	70-130	30
Chloroethane	ND	10.0	11.8	118	10.0	10.5	105	12	70-140	30
Chloroform	ND	10.0	9.81	98	10.0	10.3	103	5	70-130	30
Chloromethane	ND	10.0	12.1	121	10.0	11.5	115	6	60-130	30
cis-1,2-Dichloroethene	ND	10.0	10.0	100	10.0	10.5	105	5	70-130	30
cis-1,3-Dichloropropene	ND	10.0	10.6	106	10.0	11.1	111	4	70-130	30
Dibromochloromethane	ND	10.0	9.52	95	10.0	9.98	100	5	70-130	30
Ethylbenzene	ND	10.0	10.5	105	10.0	10.8	108	3	70-130	30
Isopropyl Benzene	ND	10.0	11.0	110	10.0	11.6	116	6	70-150	30
Methyl Tert-Butyl Ether	ND	10.0	10.1	101	10.0	10.6	106	5	70-140	30
Methylene Chloride	ND	10.0	9.82	98	10.0	10.1	101	3	70-130	30
Styrene	ND	10.0	10.4	104	10.0	10.9	109	5	70-130	30
Tetrachloroethene	ND	10.0	9.27	93	10.0	9.54	95	3	70-130	30
Toluene	ND	10.0	9.90	99	10.0	10.4	104	5	70-130	30
Trans-1,2-Dichloroethene	ND	10.0	9.54	95	10.0	9.94	99	4	70-130	30
Trans-1,3-Dichloropropene	ND	10.0	9.93	99	10.0	10.5	105	6	70-140	30
Trichloroethene	ND	10.0	10.1	101	10.0	10.2	102	2	70-130	30
Vinyl Acetate	ND	10.0	12.8	128	10.0	11.1	111	14	20-160	30
Vinyl Chloride	ND	10.0	11.3	113	10.0	10.7	107	6	60-150	30
m- and p-Xylene	ND	20.0	20.8	104	20.0	21.3	107	2	70-130	30
o-Xylene	ND	10.0	10.6	106	10.0	10.9	109	3	70-130	30
Xylenes (Total)	ND	30.0	31.4	105	30.0	32.2	107	2	70-130	30
Naphthalene	ND	10.0	10.7	107	10.0	10.4	104	3	50-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	8.73	87	10.0	8.87	89	70-140
4-Bromofluorobenzene	10.0	9.77	98	10.0	9.98	100	70-130
Toluene-d8	10.0	8.44	84	10.0	8.80	88	70-130

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR 6&12

METHOD RSK-175
DISSOLVED GASES

SDG#: 13I136

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD RSK-175
DISSOLVED GASES

A total of three (3) water samples were received on 09/17/13 for Dissolved Gas analysis, Method RSK-175 in accordance with USEPA at R.S. Kerr Environmental Research Laboratory, Ada, OK 74820 March 15, 1989.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for DGI010WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
DISSOLVED GASES

Client : TREVET
Project : TREASURE ISLAND IR 6&12

SDG NO. : 131136
Instrument ID : GCT010

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGI010WB	1	NA	09/20/1310:06	09/20/1309:20	FI20003A	FI20002A	DGI010W	Method Blank
LCS1W	DGI010WL	1	NA	09/20/1310:17	09/20/1309:20	FI20004A	FI20002A	DGI010W	Lab Control Sample (LCS)
LCD1W	DGI010WC	1	NA	09/20/1310:29	09/20/1309:20	FI20005A	FI20002A	DGI010W	LCS Duplicate
06-MW25-091613	I136-02	1	NA	09/20/1316:36	09/20/1309:20	FI20034A	FI20024A	DGI010W	Field Sample
06-MW25-091613DL	I136-02I	20	NA	09/20/1317:45	09/20/1309:20	FI20039A	FI20035A	DGI010W	Diluted Sample
06-MW25-091613D	I136-03	1	NA	09/20/1317:02	09/20/1309:20	FI20036A	FI20035A	DGI010W	Field Sample
06-MW25-091613DDL	I136-03I	20	NA	09/20/1317:58	09/20/1309:20	FI20040A	FI20035A	DGI010W	Diluted Sample
06-MW26-091613	I136-04	1	NA	09/20/1318:27	09/20/1309:20	FI20042A	FI20035A	DGI010W	Field Sample
06-MW26-091613DL	I136-04I	10	NA	09/20/1318:42	09/20/1309:20	FI20043A	FI20035A	DGI010W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/20/13 09:20
Sample ID:	06-MW25-091613	Date Analyzed:	09/20/13 16:36 # 09/20/13 17:45
Lab Samp ID:	I136-02 #I136-02I	Dilution Factor:	1 # 20
Lab File ID:	FI20034A #FI20039A	Matrix :	WATER
Ext Btch ID:	DGI010W	% Moisture :	NA
Calib. Ref.:	FI20024A #FI20035A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	220	100	6.8

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW25-091613	Date Analyzed: 09/20/13 16:36
Lab Samp ID: I136-02	Dilution Factor: 1
Lab File ID: F120034A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20024A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	98E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 13I136	Date Extracted:	09/20/13 09:20
Sample ID:	06-MW25-091613DL	Date Analyzed:	09/20/13 17:45
Lab Samp ID:	I136-02I	Dilution Factor:	20
Lab File ID:	FI20039A	Matrix :	WATER
Ext Btch ID:	DGI010W	% Moisture :	NA
Calib. Ref.:	FI20035A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	100	13
ETHENE	ND	100	12
METHANE	220	100	6.8

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW25-091613D	Date Analyzed: 09/20/13 17:02 # 09/20/13 17:58
Lab Samp ID: I136-03 #I136-03I	Dilution Factor: 1 # 20
Lab File ID: FI20036A #FI20040A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20035A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	250	100	6.8

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW25-091613D	Date Analyzed: 09/20/13 17:02
Lab Samp ID: I136-03	Dilution Factor: 1
Lab File ID: FI20036A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20035A	Instrument ID : GCT01D

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	100E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW25-091613DDL	Date Analyzed: 09/20/13 17:58
Lab Samp ID: I136-03I	Dilution Factor: 20
Lab File ID: FI20040A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20035A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	100	13
ETHENE	ND	100	12
METHANE	250	100	6.8

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW26-091613	Date Analyzed: 09/20/13 18:27 # 09/20/13 18:42
Lab Samp ID: I136-04 #I136-04I	Dilution Factor: 1 # 10
Lab File ID: FI20042A #FI20043A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20035A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
# METHANE	150	50	3.4

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/20/13 09:20
Sample ID: 06-MW26-091613	Date Analyzed: 09/20/13 18:27
Lab Samp ID: I136-04	Dilution Factor: 1
Lab File ID: FI20042A	Matrix : WATER
Ext Btch ID: DGI010W	% Moisture : NA
Calib. Ref.: FI20035A	Instrument ID : GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	83E	5.0	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 131136	Date Extracted:	09/20/13 09:20
Sample ID:	06-MW26-091613DL	Date Analyzed:	09/20/13 18:42
Lab Samp ID:	I136-04I	Dilution Factor:	10
Lab File ID:	FI20043A	Matrix :	WATER
Ext Btch ID:	DGI010W	% Moisture :	NA
Calib. Ref.:	FI20035A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	50	6.4
ETHENE	ND	50	6.0
METHANE	150	50	3.4

QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/20/13
Batch No.	: 13I136	Date Extracted:	09/20/13 09:20
Sample ID:	MBLK1W	Date Analyzed:	09/20/13 10:06
Lab Samp ID:	DGI010WB	Dilution Factor:	1
Lab File ID:	FI20003A	Matrix :	WATER
Ext Btch ID:	DGI010W	% Moisture :	NA
Calib. Ref.:	FI20002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	5.0	0.64
ETHENE	ND	5.0	0.60
METHANE	ND	5.0	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 131136
METHOD: METHOD RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGI010WB	DGI010WL	DGI010WC		
LAB FILE ID:	FI20003A	FI20004A	FI20005A		
DATE EXTRACTED:	09/20/1309:20	09/20/1309:20	09/20/1309:20	DATE COLLECTED:	NA
DATE ANALYZED:	09/20/1310:06	09/20/1310:17	09/20/1310:29	DATE RECEIVED:	09/20/13
PREP. BATCH:	DGI010W	DGI010W	DGI010W		
CALIB. REF:	FI20002A	FI20002A	FI20002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	26.0	102	25.4	25.7	101	1	70-140	30
Ethene	ND	23.7	23.9	101	23.7	23.7	100	1	70-140	30
Methane	ND	13.6	14.8	109	13.6	14.8	109	1	70-130	30

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR 6&12

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 13I136

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of four (4) water samples were received on 09/17/13 for TPH Gasoline analysis, Method 5030B/M8015 in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VG39I13L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET
Project : TREASURE ISLAND IR 6&12

SDG NO. : 131136
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG39I13B	1	NA	09/26/1321:31	09/26/1321:31	EI26007A	EI26004A	VG39I13	Method Blank
LCS1W	VG39I13L	1	NA	09/26/1320:16	09/26/1320:16	EI26005A	EI26004A	VG39I13	Lab Control Sample (LCS)
LCD1W	VG39I13C	1	NA	09/26/1320:54	09/26/1320:54	EI26006A	EI26004A	VG39I13	LCS Duplicate
091613-TB-01	I136-01	1	NA	09/27/1303:46	09/27/1303:46	EI26017A	EI26015A	VG39I13	Field Sample
06-MW25-091613	I136-02	1	NA	09/27/1304:23	09/27/1304:23	EI26018A	EI26015A	VG39I13	Field Sample
06-MW25-091613D	I136-03	1	NA	09/27/1305:01	09/27/1305:01	EI26019A	EI26015A	VG39I13	Field Sample
06-MW26-091613	I136-04	1	NA	09/27/1305:38	09/27/1305:38	EI26020A	EI26015A	VG39I13	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/27/13 03:46
Sample ID: 091613-TB-01	Date Analyzed: 09/27/13 03:46
Lab Samp ID: I136-01	Dilution Factor: 1
Lab File ID: EI26017A	Matrix : WATER
Ext Btch ID: VG39I13	% Moisture : NA
Calib. Ref.: EI26015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	31.0	40.00	77.5	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/27/13 04:23
Sample ID: 06-MW25-091613	Date Analyzed: 09/27/13 04:23
Lab Samp ID: I136-02	Dilution Factor: 1
Lab File ID: EI26018A	Matrix : WATER
Ext Btch ID: VG39I13	% Moisture : NA
Calib. Ref.: EI26015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	11J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	31.1	40.00	77.8	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/27/13 05:01
Sample ID: 06-MW25-091613D	Date Analyzed: 09/27/13 05:01
Lab Samp ID: I136-03	Dilution Factor: 1
Lab File ID: EI26019A	Matrix : WATER
Ext Btch ID: VG39I13	% Moisture : NA
Calib. Ref.: EI26015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	10J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	31.4	40.00	78.6	60-140

Parameter	H-C Range
Gasoline	C6-C10

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 13I136	Date Extracted: 09/27/13 05:38
Sample ID: 06-MW26-091613	Date Analyzed: 09/27/13 05:38
Lab Samp ID: I136-04	Dilution Factor: 1
Lab File ID: EI26020A	Matrix : WATER
Ext Btch ID: VG39I13	% Moisture : NA
Calib. Ref.: EI26015A	Instrument ID : GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	15J	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	32.6	40.00	81.5	60-140

Parameter	H-C Range
Gasoline	C6-C10

QC SUMMARIES

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/26/13
Batch No.	: 13I136	Date Extracted:	09/26/13 21:31
Sample ID:	MBLK1W	Date Analyzed:	09/26/13 21:31
Lab Samp ID:	VG39I13B	Dilution Factor:	1
Lab File ID:	EI26007A	Matrix :	WATER
Ext Btch ID:	VG39I13	% Moisture :	NA
Calib. Ref.:	EI26004A	Instrument ID :	GCT039

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
GASOLINE	ND	100	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	33.3	40.00	83.3	70-130

Parameter	H-C Range
Gasoline	C6-C10

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 131136
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39I13B	VG39I13L	VG39I13C		
LAB FILE ID:	EI26007A	EI26005A	EI26006A		
DATE EXTRACTED:	09/26/1321:31	09/26/1320:16	09/26/1320:54	DATE COLLECTED:	NA
DATE ANALYZED:	09/26/1321:31	09/26/1320:16	09/26/1320:54	DATE RECEIVED:	09/26/13
PREP. BATCH:	VG39I13	VG39I13	VG39I13		
CALIB. REF:	EI26004A	EI26004A	EI26004A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	500	469	94	500	468	94	0	60-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	40.0	34.7	87	40.0	34.9	87	70-130

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR 6&12

METHOD 3520C/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 13I136

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD 3520C/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three (3) water samples were received on 09/17/13 for TPH Diesel & Motor Oil analysis, Method 3520C/8015 MOD in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for DSI044WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.
Discrete peak(s) found in sample I136-04 was excluded.

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET
Project : TREASURE ISLAND IR 6&12

SDG NO. : 13I136
Instrument ID : GCT105

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSI044WB	1	NA	09/20/1318:56	09/19/1312:15	LI20019A	LI20017A	DSI044W	Method Blank
LCS1W	DSI044WL	1	NA	09/20/1319:13	09/19/1312:15	LI20020A	LI20017A	DSI044W	Lab Control Sample (LCS)
LCD1W	DSI044WC	1	NA	09/20/1319:30	09/19/1312:15	LI20021A	LI20017A	DSI044W	LCS Duplicate
06-MW25-091613	I136-02	1.02	NA	09/20/1320:56	09/19/1312:15	LI20026A	LI20017A	DSI044W	Field Sample
06-MW25-091613D	I136-03	0.96	NA	09/20/1321:13	09/19/1312:15	LI20027A	LI20017A	DSI044W	Field Sample
06-MW26-091613	I136-04	0.93	NA	09/20/1321:30	09/19/1312:15	LI20028A	LI20017A	DSI044W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/19/13 12:15
Sample ID: 06-MW25-091613	Date Analyzed: 09/20/13 20:56
Lab Samp ID: I136-02	Dilution Factor: 1.02
Lab File ID: LI20026A	Matrix : WATER
Ext Btch ID: DSI044W	% Moisture : NA
Calib. Ref.: LI20017A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	51
MOTOR OIL	ND	510	51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	992	1020	97.3	50-130
HEXACOSANE	311	255.0	122	70-140

RL : Reporting Limit

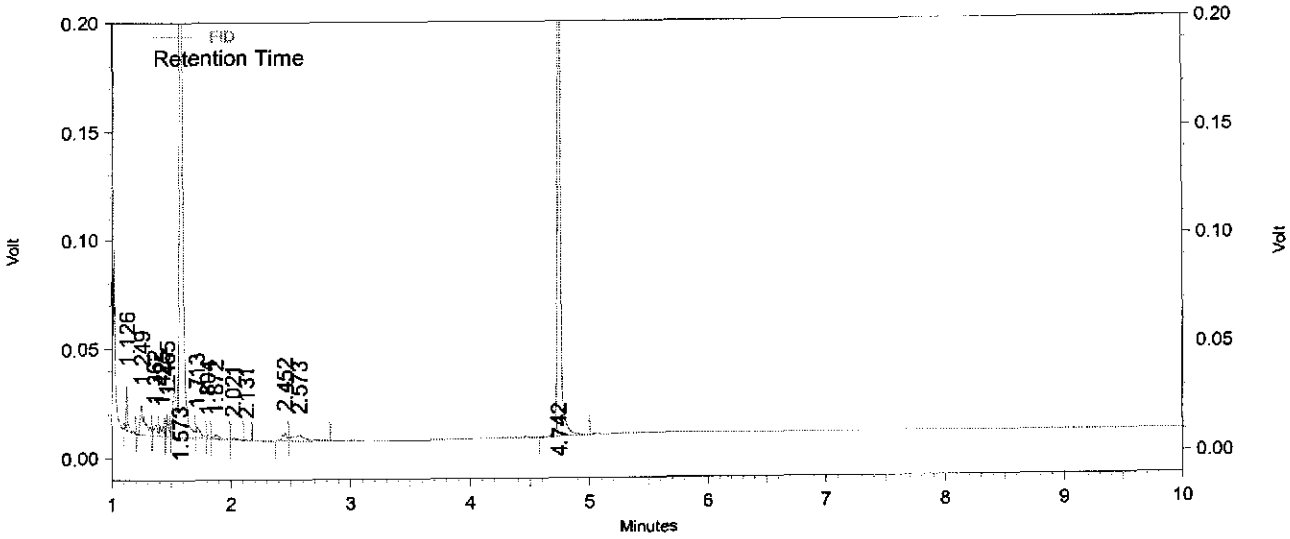
Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LI20\LI20026.dat
Method : D:\Projects\EZC331\Method\DSD5E24M.met
Sequence: : D:\Projects\EZC331\Sequence\LI20.seq
Sample ID : 13I136-02
Acquired : 09/20/13 20:56:16
Printed : 09/23/13 15:32:29
User : KYAW

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.573	1851764	19037.34242	97.270
HEXACOSANE	4.742	760255	24896.70051	30.536
DIESEL(TOTAL)		143547	31462.71743	4.562
DIESEL(C10-C24)		43108	30401.78600	1.418
M.OIL(C24-C34)		0	19563.21878	0.000
Totals		2798674		133.787



Software Version: Version 3.3.1

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: 09/16/13
Project : TREASURE ISLAND IR 6&12	Date Received: 09/17/13
Batch No. : 131136	Date Extracted: 09/19/13 12:15
Sample ID: 06-MW25-091613D	Date Analyzed: 09/20/13 21:13
Lab Samp ID: I136-03	Dilution Factor: 0.96
Lab File ID: LI20027A	Matrix : WATER
Ext Btch ID: DSI044W	% Moisture : NA
Calib. Ref.: LI20017A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	96	48
MOTOR OIL	ND	480	48

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	902	960.0	94.0	50-130
HEXACOSANE	270	240.0	112	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: TREVET	Date Collected:	09/16/13
Project	: TREASURE ISLAND IR 6&12	Date Received:	09/17/13
Batch No.	: 131136	Date Extracted:	09/19/13 12:15
Sample ID:	06-MW26-091613	Date Analyzed:	09/20/13 21:30
Lab Samp ID:	I136-04	Dilution Factor:	0.93
Lab File ID:	LI20028A	Matrix :	WATER
Ext Btch ID:	DS1044W	% Moisture :	NA
Calib. Ref.:	LI20017A	Instrument ID :	GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	93	47
MOTOR OIL	ND	460	47

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	910	930.0	97.9	50-130
HEXACOSANE	287	232.5	124	70-140

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

** : Discrete Peak(s) Excluded.

QC SUMMARIES

METHOD 3520C/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TREVET	Date Collected: NA
Project : TREASURE ISLAND IR 6&12	Date Received: 09/19/13
Batch No. : 13I136	Date Extracted: 09/19/13 12:15
Sample ID: MBLK1W	Date Analyzed: 09/20/13 18:56
Lab Samp ID: DSI044WB	Dilution Factor: 1
Lab File ID: LI20019A	Matrix : WATER
Ext Btch ID: DSI044W	% Moisture : NA
Calib. Ref.: LI20017A	Instrument ID : GCT105

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DIESEL	ND	100	50
MOTOR OIL	ND	500	50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	949	1000	94.9	50-140
HEXACOSANE	287	250.0	115	70-150

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 131136
METHOD: METHOD 3520C/8015 Mod

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSI044WB	DSI044WL	DSI044WC		
LAB FILE ID:	LI20019A	LI20020A	LI20021A		
DATE EXTRACTED:	09/19/1312:15	09/19/1312:15	09/19/1312:15	DATE COLLECTED:	NA
DATE ANALYZED:	09/20/1318:56	09/20/1319:13	09/20/1319:30	DATE RECEIVED:	09/19/13
PREP. BATCH:	DSI044W	DSI044W	DSI044W		
CALIB. REF:	LI20017A	LI20017A	LI20017A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5000	4330	87	5000	4090	82	6	70-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1000	1030	103	1000	1040	104	50-140
Hexacosane	250	289	116	250	296	118	70-150

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR 6&12

WET CHEMICAL ANALYSES

SDG#: 13I136

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD 300.0
ANIONS BY IC

A total of three (3) water samples were received on 09/17/13 for Anions (Chloride and Sulfate) by IC analysis, Method 300.0 in accordance with Methods for the Determination of Inorganic Substances in Environmental Samples (EPA/600/R-93/100).

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source. Continuing calibration verifications were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for ICI055WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated for this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

SAMPLE RESULTS

METHOD 300.0
CHLORIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 131136

Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	IC1055WB	ND	1	NA	0.200	0.100	09/25/1310:19	NA	A129-03	A129-01	IC1055W	NA	NA
LCS1W	IC1055WL	1.95	1	NA	0.200	0.100	09/25/1310:34	NA	A129-04	A129-01	IC1055W	NA	NA
LCD1W	IC1055WC	1.95	1	NA	0.200	0.100	09/25/1310:49	NA	A129-05	A129-01	IC1055W	NA	NA
06-MW26-091613	I136-041	91.4	10	NA	2.00	1.00	09/25/1311:50	NA	A129-09	A129-01	IC1055W	09/16/1309:40	09/17/13
06-MW25-091613	I136-021	21.1	5	NA	1.00	0.500	09/25/1312:05	NA	A129-10	A129-01	IC1055W	09/16/1310:35	09/17/13
06-MW25-091613D	I136-031	20.4	5	NA	1.00	0.500	09/25/1312:20	NA	A129-11	A129-01	IC1055W	09/16/1310:40	09/17/13

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13I136

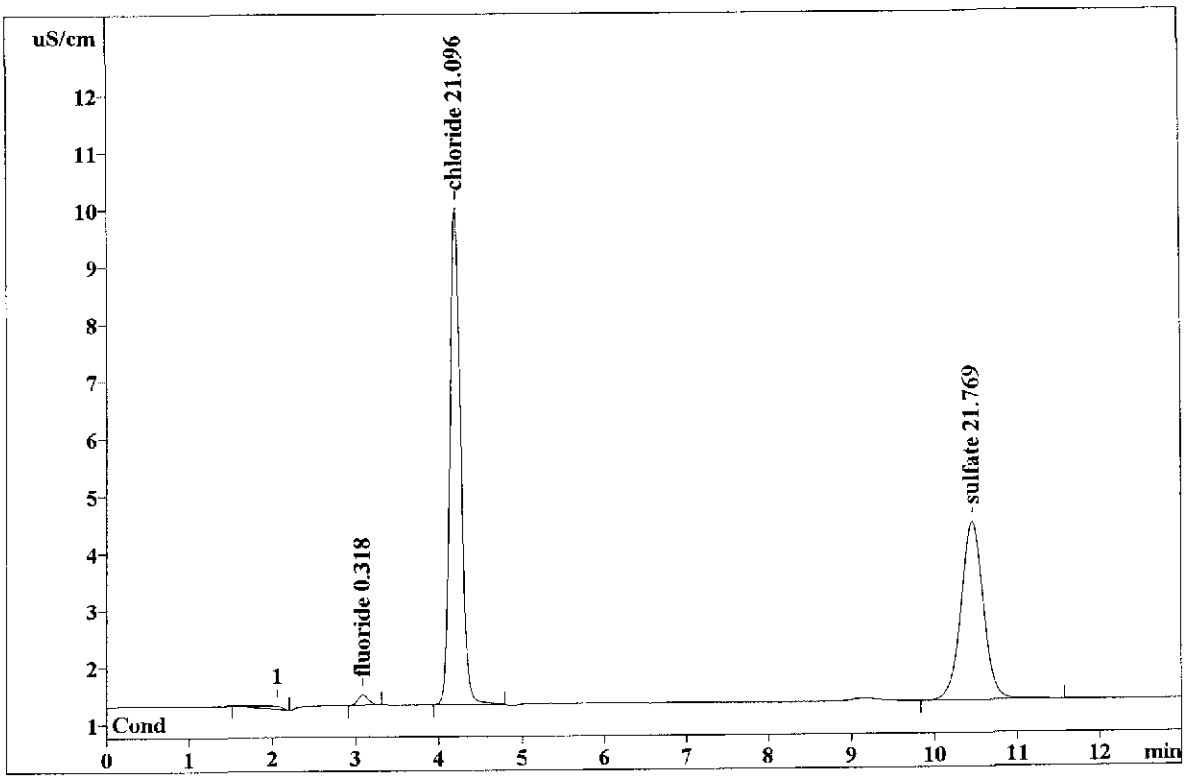
Matrix : WATER
Instrument ID : DO

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	ICI055WB	ND	1	NA	0.500	0.200	09/25/1310:19	NA	AI29-03	AI29-01	ICI055W	NA	NA
LCS1W	ICI055WL	4.75	1	NA	0.500	0.200	09/25/1310:34	NA	AI29-04	AI29-01	ICI055W	NA	NA
LCD1W	ICI055WC	4.75	1	NA	0.500	0.200	09/25/1310:49	NA	AI29-05	AI29-01	ICI055W	NA	NA
06-MW26-091613	I136-04I	35.1	10	NA	5.00	2.00	09/25/1311:50	NA	AI29-09	AI29-01	ICI055W	09/16/1309:40	09/17/13
06-MW25-091613	I136-02I	21.8	5	NA	2.50	1.00	09/25/1312:05	NA	AI29-10	AI29-01	ICI055W	09/16/1310:35	09/17/13
06-MW25-091613D	I136-03I	21.1	5	NA	2.50	1.00	09/25/1312:20	NA	AI29-11	AI29-01	ICI055W	09/16/1310:40	09/17/13

Report date: 9/25/2013 2:39:57 PM
Printed by: Jadelyn Chun

Ident: AI29-10 I136-02I DF=5
Analysis from: 9/25/2013 12:05:50 PM
File: x9251205.chw Last save: 9/25/2013 2:37:13 PM
Modified!
Method: ICD0-I17.mtw Last save: 9/25/2013 10:01:25 AM
Run operator: Jadelyn Chun
Analysis number: 92899

SAMPLE:
:
Vial number: 10
Volume: 1.0 µL
Dilution: 5.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.06	1.300	0.000	
2	3.09	0.18	1.537	0.318	fluoride
3	4.20	8.69	77.912	21.096	chloride
4	10.46	3.12	58.127	21.769	sulfate
4	13.00	12.04	138.876	43.182	

This report has been created by IC Net
METROHM LTD

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 131136
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	IC1055WB	IC1055WL	IC1055WC		
LAB FILE ID:	AI29-03	AI29-04	AI29-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	09/25/1310:19	09/25/1310:34	09/25/1310:49	DATE RECEIVED:	NA
PREP. BATCH:	IC1055W	IC1055W	IC1055W		
CALIB. REF:	AI29-01	AI29-01	AI29-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride-Cl	ND	2	1.95	98	2	1.95	97	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR 6&12
BATCH NO.: 131136
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICI055WB	ICI055WL	ICI055WC		
LAB FILE ID:	AI29-03	AI29-04	AI29-05		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	09/25/1310:19	09/25/1310:34	09/25/1310:49	DATE RECEIVED:	NA
PREP. BATCH:	ICI055W	ICI055W	ICI055W		
CALIB. REF:	AI29-01	AI29-01	AI29-01		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.75	95	5	4.75	95	0	90-110	20

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD SM2320B
ALKALINITY

A total of three (3) water samples were received on 09/17/13 for Alkalinity analysis, Method SM2320B in accordance with Standard Methods for the Examination of Water and Wastewater, 20th Edition.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for ALI013WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated for this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

METHOD SM2320B
ALKALINITY

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 13I136

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALI013WB	ND	1	NA	5	5	09/19/1318:37	NA	13E5I0929	13E5I09	ALI013W	NA	NA
LCS1W	ALI013WL	115	1	NA	5	5	09/19/1318:44	NA	13E5I0930	13E5I09	ALI013W	NA	NA
LCD1W	ALI013WC	116	1	NA	5	5	09/19/1318:51	NA	13E5I0931	13E5I09	ALI013W	NA	NA
06-MW25-091613	I136-02	255	1	NA	5	5	09/19/1320:08	NA	13E5I0940	13E5I09	ALI013W	09/16/1310:35	09/17/13
06-MW25-091613D	I136-03	254	1	NA	5	5	09/19/1320:16	NA	13E5I0941	13E5I09	ALI013W	09/16/1310:40	09/17/13
06-MW26-091613	I136-04	265	1	NA	5	5	09/19/1320:25	NA	13E5I0942	13E5I09	ALI013W	09/16/1309:40	09/17/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 131136
METHOD : SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	AL1013WB	AL1013WL	AL1013WC
LAB FILE ID :	13E510929	13E510930	13E510931
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	09/19/1318:37	09/19/1318:44	09/19/1318:51
PREP BATCH :	AL1013W	AL1013W	AL1013W
CALIBRATION REF:	13E5109	13E5109	13E5109

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	ND	121	115	95	121	116	96	1	80-120	20

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR 6&12

SDG : 13I136

METHOD 376.1
SULFIDE

A total of three (3) water samples were received on 09/17/13 for Sulfide analysis, Method 376.1 in accordance with Standard Methods for the Examination of Water and Wastewater, 20th Edition.

Holding Time
Samples were analyzed within the prescribed holding time.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for SDI007WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated for this SDG. However, sample duplicate was analyzed with the samples. RPD was within project limit.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

METHOD SM4500-S2F
SULFIDE

Client : TREVET
Project : TREASURE ISLAND IR 6&12
Batch No. : 131136

Matrix : WATER
InstrumentID : NA

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	SDI007WB	ND	1	NA	1	1	09/20/1313:03	NA	13SDI00701	13SDI007	SDI007W	NA	NA
LCS1W	SDI007WL	2.03	1	NA	1	1	09/20/1313:12	NA	13SDI00702	13SDI007	SDI007W	NA	NA
LCD1W	SDI007WC	2.15	1	NA	1	1	09/20/1313:15	NA	13SDI00703	13SDI007	SDI007W	NA	NA
06-MW25-091613	I136-02	ND	1	NA	1	1	09/20/1313:21	NA	13SDI00704	13SDI007	SDI007W	09/16/1310:35	09/17/13
06-MW25-091613D	I136-03	ND	1	NA	1	1	09/20/1313:24	NA	13SDI00705	13SDI007	SDI007W	09/16/1310:40	09/17/13
06-MW26-091613	I136-04	ND	1	NA	1	1	09/20/1313:31	NA	13SDI00706	13SDI007	SDI007W	09/16/1309:40	09/17/13
06-MW26-091613DUP	I136-04D	ND	1	NA	1	1	09/20/1313:34	NA	13SDI00707	13SDI007	SDI007W	09/16/1309:40	09/17/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 131136
METHOD : METHOD SM4500-S2F

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	SDI007WB	SDI007WL	SDI007WC
LAB FILE ID :	13SDI00701	13SDI00702	13SDI00703
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	09/20/1313:03	09/20/1313:12	09/20/1313:15
PREP BATCH :	SDI007W	SDI007W	SDI007W
CALIBRATION REF:	13SDI007	13SDI007	13SDI007

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
SULFIDE	ND	2	2.03	101	2	2.15	108	6	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR 6&12
BATCH NO. : 13I136
METHOD : METHOD SM4500-S2F

==========

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	06-MW26-091613	06-MW26-091613DUP
LAB SAMPLE ID :	I136-04	I136-04D
LAB FILE ID :	13SDI00706	13SDI00707
DATE PREPARED :	NA	NA
DATE ANALYZED :	09/20/1313:31	09/20/1313:34
PREP BATCH :	SDI007W	SDI007W
CALIBRATION REF:	13SDI007	13SDI007

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
SULFIDE	ND	ND	0	20

LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

December 3, 2013

SUBJECT: Treasure Island, IR Sites 6 & 12, Data Validation

Dear Mrs. Bjorkman,

Enclosed is the final validation report for the fractions listed below. This SDG was received on November 1, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 30729:

SDG #	Fraction
13I136	Volatiles, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Methane, Ethane, & Ethene, Wet Chemistry, Radium-226

The data validation was performed under EPA Level III & IV validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, CLPNFG, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

359 pages-SF

Attachment 1

ADR/IV

LDC #30729 (Trevet/Accord-San Diego / Treasure Island, IR Sites 6 & 12)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		TPH-G (8015M)		TPH-E 8015M		Methane Ethane Ethene		Alk (2320B)		Cl,SO_4 (300.0)		NO_3-N (353.3)		S= (376.1)																									
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	13I136	11/01/13	11/26/13	3	0	3	0	2	0	3	0	2	0	2	0	2	0	2	0																								
A	13I136	11/01/13	11/26/13	1	0	1	0	1	0	2	0	1	0	1	0	1	0	1	0																								
Total	A/AK			4	0	4	0	3	0	5	0	3	0	3	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28

Shaded cells indicate Level IV validation (all other cells are Level III validation) These sample counts do not include MS/MSD and DUPs

30729ST-6-12.wpd

Data Validation Report
Treasure Island, IR Sites 6 & 12

SDG: 13I136

Prepared for

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Prepared by

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December 2, 2013

INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the September 2013 sampling period. Data validation was performed in accordance with US EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (CLPNFG) (June 2008) and US EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (CLPNFG) (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Methane, Ethene, and Ethane by Method RSK-175

Wet Chemistry:
Alkalinity by Standard Method 2320B
Chloride and Sulfate by EPA Method 300.0
Nitrate as Nitrogen by EPA Method 353.3
Sulfide by EPA Method 376.1

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, and field duplicates. Approximately 14 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment I, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, ICB/CCBs and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method blanks or initial, continuing, and preparation blanks

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the RL as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13I136	All compounds reported as detected below the RL.	J (all detects)	A

In instances where data was reported above the calibration range and subsequently diluted, data was qualified as unusable by the validators in order to yield only one complete set of data for a given sample.

XI. Field Duplicate Samples

One field duplicate pair was collected and analyzed for VOCs, TPH as gasoline, TPH as extractables, methane, ethane, ethene, alkalinity, chloride, sulfate, nitrate as nitrogen and sulfide. The field duplicate result comparisons are provided in Enclosure I.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs and TPH as gasoline. No contaminants were found in the trip blank.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Sep-2013	091613-TB-01	I136-01	TB	5030B	8015B GRO	3
16-Sep-2013	091613-TB-01	I136-01	TB	5030B	8260B	3
16-Sep-2013	06-MW26-091613	I136-04	N	3520C	8015B DRO	3
16-Sep-2013	06-MW26-091613	I136-04	N	5030B	8015B GRO	3
16-Sep-2013	06-MW26-091613	I136-04	N	5030B	8260B	3
16-Sep-2013	06-MW26-091613	I136-04	N	GEN PREP	353.3	3
16-Sep-2013	06-MW26-091613	I136-04	N	GEN PREP	376.1	3
16-Sep-2013	06-MW26-091613	I136-04	N	GEN PREP	RSK-175	3
16-Sep-2013	06-MW26-091613	I136-04	N	GEN PREP	SM2320B	3
16-Sep-2013	06-MW26-091613DUP	I136-04D	DUP	GEN PREP	376.1	3
16-Sep-2013	06-MW26-091613	I136-04I	N	GEN PREP	300.0	3
16-Sep-2013	06-MW26-091613	I136-04I	N	GEN PREP	RSK-175	3
16-Sep-2013	06-MW25-091613	I136-02	N	3520C	8015B DRO	4
16-Sep-2013	06-MW25-091613	I136-02	N	5030B	8015B GRO	4
16-Sep-2013	06-MW25-091613	I136-02	N	5030B	8260B	4
16-Sep-2013	06-MW25-091613	I136-02	N	GEN PREP	353.3	4
16-Sep-2013	06-MW25-091613	I136-02	N	GEN PREP	376.1	4
16-Sep-2013	06-MW25-091613	I136-02	N	GEN PREP	RSK-175	4
16-Sep-2013	06-MW25-091613	I136-02	N	GEN PREP	SM2320B	4
16-Sep-2013	06-MW25-091613	I136-02I	N	GEN PREP	300.0	4
16-Sep-2013	06-MW25-091613	I136-02I	N	GEN PREP	RSK-175	4
16-Sep-2013	06-MW25-091613D	I136-03	FD	3520C	8015B DRO	3
16-Sep-2013	06-MW25-091613D	I136-03	FD	5030B	8015B GRO	3
16-Sep-2013	06-MW25-091613D	I136-03	FD	5030B	8260B	3
16-Sep-2013	06-MW25-091613D	I136-03	FD	GEN PREP	353.3	3
16-Sep-2013	06-MW25-091613D	I136-03	FD	GEN PREP	376.1	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Sep-2013	06-MW25-091613D	I136-03	FD	GEN PREP	RSK-175	3
16-Sep-2013	06-MW25-091613D	I136-03	FD	GEN PREP	SM2320B	3
16-Sep-2013	06-MW25-091613D	I136-03I	FD	GEN PREP	300.0	3
16-Sep-2013	06-MW25-091613D	I136-03I	FD	GEN PREP	RSK-175	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 13I136 **Laboratory: EMXT**

EDD Filename: 13I136R **eQAPP Name: TI_Site6and12_120213**

Method Category: **VOA**
Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: **06-MW25-091613** ***Collected:*** **9/16/2013 10:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	11	J	10	MDL	100	RL	UG/L	J	RI

Method Category: **VOA**
Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **06-MW25-091613** ***Collected:*** **9/16/2013 10:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.21	J	0.20	MDL	0.50	RL	UG/L	J	RI

Method Category: **VOA**
Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: **06-MW25-091613D** ***Collected:*** **9/16/2013 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	10	J	10	MDL	100	RL	UG/L	J	RI

Method Category: **VOA**
Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **06-MW25-091613D** ***Collected:*** **9/16/2013 10:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.24	J	0.20	MDL	0.50	RL	UG/L	J	RI

Method Category: **VOA**
Method: **8015B GRO** ***Matrix:*** **AQ**

Sample ID: **06-MW26-091613** ***Collected:*** **9/16/2013 9:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
GASOLINE RANGE ORGANICS	15	J	10	MDL	100	RL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Data Qualifier Summary

Lab Reporting Batch ID: 13I136 **Laboratory: EMXT**

EDD Filename: 13I136R **eQAPP Name: TI_Site6and12_120213**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

Sample ID: **06-MW26-091613** ***Collected:*** **9/16/2013 9:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ISOPROPYLBENZENE	0.54	J	0.20	MDL	2.0	RL	UG/L	J	RI
BENZENE	0.23	J	0.20	MDL	0.50	RL	UG/L	J	RI
ETHYLBENZENE	1.8	J	0.20	MDL	2.0	RL	UG/L	J	RI
TOLUENE	0.22	J	0.20	MDL	0.50	RL	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Data Qualifier Summary

Lab Reporting Batch ID: 13I136 **Laboratory: EMXT**

EDD Filename: 13I136R **eQAPP Name: TI_Site6and12_120213**

Reason Code Legend

Reason Code	*Description*
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR 6&12

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

13I136

Reporting Limit Outliers

Lab Reporting Batch ID: 13I136 **Laboratory: EMXT**

EDD Filename: 13I136R **eQAPP Name: TI_Site6and12_120213**

Method: 8015B GRO

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
06-MW25-091613	GASOLINE RANGE ORGANICS	J	11	100	RL	UG/L	J (all detects)
06-MW25-091613D	GASOLINE RANGE ORGANICS	J	10	100	RL	UG/L	J (all detects)
06-MW26-091613	GASOLINE RANGE ORGANICS	J	15	100	RL	UG/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
06-MW25-091613	TRICHLOROETHENE	J	0.21	0.50	RL	UG/L	J (all detects)
06-MW25-091613D	TRICHLOROETHENE	J	0.24	0.50	RL	UG/L	J (all detects)
06-MW26-091613	ISOPROPYLBENZENE	J	0.54	2.0	RL	UG/L	J (all detects)
	BENZENE	J	0.23	0.50	RL	UG/L	
	ETHYLBENZENE	J	1.8	2.0	RL	UG/L	
	TOLUENE	J	0.22	0.50	RL	UG/L	

Field Duplicate RPD Report

Lab Reporting Batch ID: 13I136 **Laboratory: EMXT**

EDD Filename: 13I136R **eQAPP Name: TI_Site6and12_120213**

Method: 300.0
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	06-MW25-091613	06-MW25-091613D			
CHLORIDE	21.1	20.4	3	30.00	No Qualifiers Applied
SULFATE	21.8	21.1	3	30.00	

Method: 8015B GRO
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	06-MW25-091613	06-MW25-091613D			
GASOLINE RANGE ORGANICS	11	10	10	30.00	No Qualifiers Applied

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	06-MW25-091613	06-MW25-091613D			
BENZENE	0.88	0.93	6	30.00	No Qualifiers Applied
TRICHLOROETHENE	0.21	0.24	13	30.00	

Method: RSK-175
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	06-MW25-091613	06-MW25-091613D			
METHANE	220	250	13	30.00	No Qualifiers Applied

Method: SM2320B
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	06-MW25-091613	06-MW25-091613D			
ALKALINITY	255	254	0	30.00	No Qualifiers Applied

LDC #: 30729A1
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 11/17/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II.	GC/MS Instrument performance check		
III.	Initial calibration		RSD ≤ 30?
IV.	Continuing calibration/ICV		|CV|/CCV ≤ 25?
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates	—	FD = 2 + 3
XVII.	Field blanks	—	TB = 1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	091613-TB-01	11		21		31	
2	06-MW~~24~~25-091613**	12		22		32	
3	06-MW25-091613D	13		23		33	
4	06-MW26-091613	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 30729A6

SDG #: 13I136

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 11/8/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: MG

METHOD: Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Nitrate-N (EPA Method 353.3), Sulfide (~~EPA Method 376.~~1) SM4500-S2F

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VI.	Duplicates	A	Not reviewed for ADR validation. DP
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	SW	(1,2)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	06-MW~~14~~25-091613** water	11		21		31	
2	06-MW25-091613D	12		22		32	
3	06-MW26-091613	13		23		33	
4	06-MW26-091613DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A7
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 11/17/13
Page: 1 of 1
Reviewer: BK
2nd Reviewer: SH

METHOD: GC TPH as Gasoline (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤ 20?
III.	Calibration verification/ICV	A	|CV| ≤ 20?
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data		Not reviewed for ADR validation.
XII.	Field duplicates	—	FD = 2+3
XIII.	Field blanks	—	TB = 1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	091613-TB-01	11		21		31	MBRKIW
2	06-MW~~24~~25-091613**	12		22		32	
3	06-MW25-091613D	13		23		33	
4	06-MW26-091613	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A8

SDG #: 13I136

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 11/17/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: SM

METHOD: GC TPH as Extractables (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤ 20?
III.	Calibration verification/ICV	A	1CV/CCV ≤ 20?
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data		Not reviewed for ADR validation.
XII.	Field duplicates	—	FD = 1 + 2
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	06-MW~~24~~25-091613**	11		21		31	
2	06-MW25-091613D	12		22		32	
3	06-MW26-091613	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A51
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/17/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤20?
III.	Calibration verification/ICV	A	1a/1ccv ≤20?
IV.	Blanks	N	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	N	
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	N	
XII.	Field duplicates	—	FD: 1 & 3, 2 + 4
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	06-MW~~14~~25-091613**	11		21		31	
2	06-MW~~14~~25-091613DL**	12		22		32	
3	06-MW25-091613D	13		23		33	
4	06-MW25-091613DDL	14		24		34	
5	06-MW26-091613	15		25		35	
6	06-MW26-091613DL	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Enclosure II

EPA Level IV Data Validation Reports

LDC Report# 30729A1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	September 16, 2013
LDC Report Date:	November 19, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13I136

Sample Identification

06-MW25-091613

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 091613-TB-01 was identified as a trip blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13I136	All compounds reported below the RL.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples 06-MW25-091613 and 06-MW25-091613D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	06-MW25-091613	06-MW25-091613D	
Benzene	0.88	0.93	6 (≤30)
Trichloroethene	0.21	0.24	13 (≤30)

Treasure Island, IR Sites 6 & 12
Volatiles - Data Qualification Summary - SDG 13I136

SDG	Sample	Compound	Flag	A or P	Reason
13I136	06-MW25-091613	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Volatiles - Field Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

LDC #: 30729A1
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 11/17/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|CV| CV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not ~~reviewed for ADR validation~~.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	~~A~~ N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	~~Not reviewed for ADR validation~~.
XVI.	Field duplicates	SW	FD = ~~3 + 4~~ BR 2 + 3
XVII.	Field blanks	ND	TB = 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~091613-TB-01~~	11		21		31	MBLK1W
2	06-MW~~14~~ 25-091613**	12		22		32	
3	~~06-MW25-091613D~~	13		23		33	
4	~~06-MW26-091613~~	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 30729A1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30%~~15%~~ 15% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ ~~20%~~ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 30729A1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	✓		✗	BR
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	✓		✗	BR
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	✓	✗	BR	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC#: 30729A1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC MS Volatiles (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (µg/L)		RPD (≤30)
	2	3	
V	0.88	0.93	6
S	0.21	0.24	13

V:\FIELD DUPLICATES\30729A1.wpd

LDC #: 30729A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

average RRF = sum of the RRFs/number of standards

%RSD = 100 * (S/X)

A_x = Area of Compound

C_x = Concentration of compound,

S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	9/6/2013	Benzene (IS1)	1.497	1.497	1.534	1.534	3.22	3.22
	TO01		Tetrachloroethene (IS2	0.344	0.344	0.348	0.348	3.54	3.53
			1,1,2,2-Tetrachloethane (IS3	0.718	0.718	0.779	0.779	6.23	6.25

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 30729A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RIV614	9/27/2013	Benzene (IS1)	1.534	1.515	1.515	1.2	1.25
			Tetrachloroethene (IS2)	0.348	0.320	0.320	8.0	7.8
			1,1,2,2-Tetrachloethane (IS3)	0.779	0.850	0.850	9.1	9.1
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 307291

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4	10.00	9.15	91.5	91.5	0
Toluene-d8	↓	8.78	87.8	87.8	0
Bromofluorobenzene		9.87	98.7	98.7	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 30729A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: LCS1W | LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	10.0	10.0	9.19	9.43	92	92	94	94	3	3
Trichloroethene	↓	↓	10.1	10.2	101	101	102	102	2	1
Benzene			10.1	10.6	101	101	106	106	5	5
Toluene			9.90	10.4	99	99	104	104	5	5
Chlorobenzene			10.5	10.8	105	105	108	108	3	3

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

V = 0.88 µg/L

Sample I.D. 2, V:

Conc. = $\frac{(231730)(10)(\quad)(\quad)}{(1768358)(1.534)(\quad)(\quad)}$

= 0.883744724 µg/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

LDC Report# 30729A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	September 16, 2013
LDC Report Date:	November 11, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13I136

Sample Identification

06-MW25-091613

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 353.3 for Nitrate as Nitrogen. Standard Method 4500-S2F for Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the RL and above the MDL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13I136	All analytes reported below the RL and above the MDL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples 06-MW25-091613 and 06-MW25-091613D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)
	06-MW25-091613	06-MW25-091613D	
Alkalinity	225	254	0 (≤30)
Chloride	21.1	20.4	3 (≤30)
Sulfate	21.8	21.1	3 (≤30)

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Data Qualification Summary - SDG 13I136

SDG	Sample	Compound	Flag	A or P	Reason
13I136	06-MW25-091613	All analytes reported below the RL and above the MDL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

LDC #: 30729A6

SDG #: 13I136

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~ IV

Date: 11/8/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: MG

METHOD: Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Nitrate-N (EPA Method 353.3), Sulfide (~~EPA Method 376.1~~ SM4500-S2 F)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VI.	Duplicates	A	Not reviewed for ADR validation. DD
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	SW	(1,2)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

water

1	06-MW~~14~~25-091613**	11		21		31	
~~2~~	~~06-MW25-091613D~~	12		22		32	
3	06-MW~~26~~-091613	13		23		33	
4	~~06-MW26-091613DUP~~	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A6

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: MG

Method: Inorganics (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓	✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 30729A6

VALIDATION FINDINGS CHECKLIST

Reviewer: OL
2nd Reviewer: MG

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 30729A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: MG

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC-1	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC# 30729A6

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: CA

2nd Reviewer: MG

Inorganics: Method See Cover

Analyte	Concentration (mg/L)		RPD (≤30)
	1	2	
Alkalinity	255	254	0
Chloride	21.1	20.4	3
Sulfate	21.8	21.1	3

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\30729A6.wpd

LDC #: 30729A6

Validation Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CL
2nd Reviewer: MG

Method: Inorganics, Method see cover

The correlation coefficient (r) for the calibration of SO4 was recalculated.Calibration date: 9/17/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found X 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis	Analyte	Standard	Conc. (mg/l)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	SO4	s1	0.05	0.6449	0.999568	0.999567	Y
		s2	0.1	1.14			
		s3	0.2	2.417			
		s4	0.5	5.519			
		s5	1	11.1			
		s6	2	23.09			
		s7	5	62.85			
		s8	10	133.1			
		s9	20	278.7			
Calibration verification	Cl	ICV	1	0.941	94.1	94.1	
Calibration verification	NO_3N	CCV	0.5	0.491	98	–	
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A2

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: QR
2nd Reviewer: MG

METHOD: Inorganics, Method seecover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	SO_4	4.75	5	95	95	Y
N	Matrix spike sample		(SSR-SR)				
4	Duplicate sample	S^{2-}	ND	ND	0	0	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 30729A6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: MG

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Cl reported with a positive detect were recalculated and verified using the following equation:

Concentration =

0.052882(Area)+0.098934

Recalculation:

(0.052882(77.912)+0.0989834) 5 = 21.096 mg/L

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
	1	Cl	21.1	21.1	Y
		SO_4	21.8	21.8	Y

Note:

LDC Report# 30729A7

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	September 16, 2013
LDC Report Date:	November 19, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13I136

Sample Identification

06-MW25-091613

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample 091613-TB-01 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13I136	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable for samples.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples 06-MW25-091613 and 06-MW25-091613D were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	06-MW25-091613	06-MW25-091613D	
TPH as gasoline	11	10	10 (≤30)

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 13I136

SDG	Sample	Compound	Flag	A or P	Reason
13I136	06-MW25-091613	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

LDC #: 30729A7

SDG #: 13I136

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 11/17/13

Page: 1 of 1

Reviewer: BR

2nd Reviewer: A

METHOD: GC TPH as Gasoline (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	ICV/CCV ≤20%
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.
XII.	Field duplicates	SW	FD = 2 + 3
XIII.	Field blanks	ND	TB = 1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	~~091613-TB-01~~	11		21		~~31~~	MB2K1W
2	06-MW1~~4~~2S-091613**	12		22		32	
3	~~06-MW25-091613D~~	13		23		33	
4	~~06-MW26-091613~~	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A7

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 3072947

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

LDC#: 30729A7

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: BR
2nd Reviewer: C

METHOD: GC TPH as Gasoline (EPA SW 846 Method 8015B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (µg/L)		RPD (≤ 30)
	2	3	
Gasoline	11	10	10

V:\FIELD DUPLICATES\30729A7.wpd

LDC #: 30729A7

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 500 std)	Recalculated (CF 500 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL DB-5	6/7/2013	GRO (C6-C10)	21790	21790	20887.3	20887.3	4.5	4.5

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC X HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	EI26004	9/26/2013 19:39	GRO (C6-C10)	500	503.66	503.66	1	1
2	EI26015	9/27/2013 2:31	GRO (C6-C10)	500	489.82	489.82	2	2
3								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3072997

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer:

METHOD: X **GC** __ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Bromofluorobenzene	DB-5	40	31.11	77.8	77.8	0

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 3072942

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W | LCD1W

Compound	Spike Added (µg/L)		Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	500	500	469	468	94	94	94	94	0	0.2
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3072947

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Gasoline = 11 ug/L

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name Gasoline (C_6 - C_{10})

Concentration = (226781)(5) / (20887.3)(5)
= 10.85734309 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

LDC Report# 30729A8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	September 16, 2013
LDC Report Date:	November 19, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13I136

Sample Identification

06-MW25-091613

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13I136	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples 06-MW25-091613 and 06-MW25-091613D were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 13I136

SDG	Sample	Compound	Flag	A or P	Reason
13I136	06-MW25-091613	All compounds reported below the RL.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

LDC #: 30729A8
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 11/17/13
Page: 1 of 1
Reviewer: DR
2nd Reviewer: C

METHOD: GC TPH as Extractables (EPA SW846 Method 8015M)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	A	Not reviewed for ADR validation.
V	Surrogate recovery	A	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.
XII.	Field duplicates	ND	FD = 1+2
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	06-MW~~14~~ 25-091613**	11		21		31	MBLK1W
2	~~06-MW25-091613D~~	12		22		32	
3	~~06-MW26-091613~~	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A8

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓	✓	
Did the initial calibration meet the curve fit acceptance criteria?				
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 20729A8

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 30729A8

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 100 std)	Recalculated (CF 100 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	5/24/2013	Diesel (C10-C24)	30775	30775	30401.8	30401.9	12.6	12.6
	GCT-D5								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC___X__HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	LI20017A	9/20/2013 18:22	Diesel (C10-C24)	500	545.96	545.96	9	9
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A8

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer:

METHOD: X **GC** ___ **HPLC**

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Bromobenzene	APS	100	97.270	97.3	97.3	0
Hexacosane		25	30.536	122	122	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 30729A8

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =({{SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W / LCD1W

Compound	Spike Added (µg/L)		Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)	5000	5000	4330	4090	87	~~87~~ 87	82	82	6	5.7
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A8

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 1 Compound Name Diesel (C_{10} - C_{24})

Concentration = ND

LCS1W: Diesel = 4330 ug/L

$= \frac{(13149424)(10)(1000)}{30401.786(1000)}$

$= 4325.214315$ ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

LDC Report# 30729A51

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	September 16, 2013
LDC Report Date:	November 21, 2013
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13I136

Sample Identification

06-MW25-091613
06-MW25-091613DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for all compounds were less than or equal to 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Calibration Verification

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitation were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
06-MW25-091613	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the RL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13I136	All compounds reported below the RL.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
06-MW25-091613	Methane	X	A
06-MW25-091613DL	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

Samples 06-MW25-091613 and 06-MW25-091613D and samples 06-MW25-091613DL and 06-MW25-091613DDL were identified as field duplicates. No methane, ethane, or ethene was detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	06-MW25-091613	06-MW25-091613D	
Methane	98	100	2 (≤30)

Compound	Concentration (ug/L)		RPD (Limits)
	06-MW25-091613DL	06-MW25-091613DDL	
Methane	220	250	13 (≤30)

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13I136

SDG	Sample	Compound	Flag	A or P	Reason
13I136	06-MW25-091613	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13I136	06-MW25-091613 06-MW25-091613DL	All compounds reported below the RL.	J (all detects)	A	Compound quantitation
13I136	06-MW25-091613	Methane	X	A	Overall assessment of data
13I136	06-MW25-091613DL	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13I136

No Sample Data Qualified in this SDG

LDC #: 30729A51
SDG #: 13I136
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~ IV

Date: 11/17/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/16/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	A ~~N~~	
V	Surrogate recovery	N	
VI.	Matrix spike/Matrix spike duplicates	N ~~N~~	Client spec.
VII.	Laboratory control samples	A ~~N~~	LCS/D
VIII.	Target compound identification	A ~~N~~	
IX.	Compound Quantitation and CRQLs	SW ~~N~~	
X.	System Performance	A ~~N~~	
XI.	Overall assessment of data	SW ~~N~~	
XII.	Field duplicates	SW	FD = 1 + 3, 2 + 4
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	06-MW~~24~~ 26-091613**	11		21		31	MBLK1W
2	06-MW~~14~~ 25-091613DL**	12		22		32	
3	~~06-MW25-091613D~~	13		23		33	
4	06-MW25-091613DDL	14		24		34	
5	06-MW26-091613	15		25		35	
6	~~06-MW26-091613DL~~	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 30729A51

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 36729A57

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 30729A51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 3, 5	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 36729A51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 3, 5	~~BA~~ X/A
				↓
	All except Methane	dilution	2, 4, 6	

Comments: _____

OVRNew2.wpd

LDC#: 30729A51

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: BR
2nd Reviewer: A

METHOD: GC M-E-E (Method RSK-175)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (µg/L)		RPD (≤ 30)
	1	3	
Methane	98	100	2

Compound	Concentration (µg/L)		RPD (≤ 30)
	2	4	
Methane	220	250	13

V:\FIELD DUPLICATES\30729A51.wpd

LDC #: 30729A51

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC __X_____ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 3.4 std)	Recalculated (CF 3.4 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/11/2013	Methane	32131	32131	32355.3	32355.2	6.9	6.9
	GCT010								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	F120002A	9/20/2013	Methane	13.6	13.63	13.63	1	1
2	F120024A	9/20/2013	Methane	13.6	13.70	13.70	1	1
		14:30						
3	F120035A	9/20/2013	Methane	13.6	13.38	13.38	1	1
		16:49						

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A5)

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: ☒ GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W/LCD1W

Compound	Spike Added (µg/L)		Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)	13.4	13.6	14.85	14.8 77	109	109	109	109	1	0.5
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 30729A51

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: X **GC** __ **HPLC**

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

QAY = 220 ug/L

Sample ID. 2 Compound Name Methane

Concentration = (363722)(20) / 32355.3
= 224.8294351 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 18:50
Sample ID:	121013-TB-01	Date Analyzed:	12/12/13 18:50
Lab Samp ID:	L065-01	Dilution Factor:	1
Lab File ID:	RLC212	Matrix	: WATER
Ext Btch ID:	VO67L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	8.75	10.00	87.5	75-120
TOLUENE-D8	9.19	10.00	91.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 19:52
Sample ID:	21-MW09A-121013	Date Analyzed:	12/12/13 19:52
Lab Samp ID:	L065-02	Dilution Factor:	1
Lab File ID:	RLC214	Matrix :	WATER
Ext Btch ID:	VO67L10	% Moisture :	NA
Calib. Ref.:	RJC325	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	21	0.50	0.10	0.20
TETRACHLOROETHENE	0.48J	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	3.2	0.50	0.10	0.20
TRICHLOROETHENE	3.8	0.50	0.10	0.20
VINYL CHLORIDE	4.5	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	8.74	10.00	87.4	75-120
TOLUENE-D8	9.16	10.00	91.6	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 20:25
Sample ID:	21-IP07-121013	Date Analyzed:	12/12/13 20:25
Lab Samp ID:	L065-03	Dilution Factor:	1
Lab File ID:	RLC215	Matrix	: WATER
Ext Btch ID:	VO67L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	9.9	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	14	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	8.69	10.00	86.9	75-120
TOLUENE-D8	9.00	10.00	90.0	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 20:57
Sample ID:	21-IP07-121013-D	Date Analyzed:	12/12/13 20:57
Lab Samp ID:	L065-04	Dilution Factor:	1
Lab File ID:	RLC216	Matrix	: WATER
Ext Btch ID:	VO67L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	10	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	14	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	8.83	10.00	88.3	75-120
TOLUENE-D8	8.97	10.00	89.7	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 21:59
Sample ID:	21-MW02A-121013	Date Analyzed:	12/12/13 21:59
Lab Samp ID:	L065-05	Dilution Factor:	1
Lab File ID:	RLC218	Matrix	: WATER
Ext Btch ID:	VO67L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.29J	0.50	0.10	0.20
TETRACHLOROETHENE	3.7	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.68	0.50	0.10	0.20
TRICHLOROETHENE	1.4	0.50	0.10	0.20
VINYL CHLORIDE	0.36J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	8.86	10.00	88.6	75-120
TOLUENE-D8	8.99	10.00	89.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 18:17
Sample ID:	121013-ER-01	Date Analyzed:	12/12/13 18:17
Lab Samp ID:	L065-06	Dilution Factor:	1
Lab File ID:	RLC211	Matrix	: WATER
Ext Btch ID:	VO67L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	8.82	10.00	88.2	75-120
TOLUENE-D8	9.15	10.00	91.5	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/12/13 14:13
Sample ID:	MBLK1W	Date Analyzed:	12/12/13 14:13
Lab Samp ID:	VO67L10B	Dilution Factor:	1
Lab File ID:	RLC203	Matrix :	WATER
Ext Btch ID:	VO67L10	% Moisture :	NA
Calib. Ref.:	RJC325	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	8.87	10.00	88.7	75-120
TOLUENE-D8	9.23	10.00	92.3	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L065
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO67L10B	VO67L10L	VO67L10C		
LAB FILE ID:	RLC203	RLC200	RLC201		
DATE EXTRACTED:	12/12/1314:13	12/12/1312:39	12/12/1313:11	DATE COLLECTED:	NA
DATE ANALYZED:	12/12/1314:13	12/12/1312:39	12/12/1313:11	DATE RECEIVED:	12/12/13
PREP. BATCH:	VO67L10	VO67L10	VO67L10		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.58	96	10.0	9.59	96	0	70-125	30
Tetrachloroethene	ND	10.0	8.52	85	10.0	8.49	85	0	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.58	86	10.0	8.67	87	1	60-140	30
Trichloroethene	ND	10.0	9.64	96	10.0	9.63	96	0	70-125	30
Vinyl Chloride	ND	10.0	13.2	132	10.0	13.8	138	5	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.6	106	70-120
4-Bromofluorobenzene	10.0	8.65	87	10.0	8.65	87	75-120
Toluene-d8	10.0	9.14	91	10.0	9.01	90	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.6	106	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L065
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	21-MW02A-121013				
LAB SAMP ID:	L065-05	L065-05M	L065-05S		
LAB FILE ID:	RLC218	RLC219	RLC220		
DATE EXTRACTED:	12/12/1321:59	12/12/1322:33	12/12/1323:04	DATE COLLECTED:	12/10/13
DATE ANALYZED:	12/12/1321:59	12/12/1322:33	12/12/1323:04	DATE RECEIVED:	12/12/13
PREP. BATCH:	VO67L10	VO67L10	VO67L10		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	0.294J	10.0	9.44	91	10.0	9.35	91	1	70-125	30
Tetrachloroethene	3.72	10.0	12.1	84	10.0	11.8	80	3	45-150	30
Trans-1,2-Dichloroethene	0.678	10.0	9.05	84	10.0	8.66	80	4	60-140	30
Trichloroethene	1.37	10.0	10.8	94	10.0	10.4	91	3	70-125	30
Vinyl Chloride	0.362J	10.0	12.7	123	10.0	11.8	115	7	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.1	101	70-120
4-Bromofluorobenzene	10.0	8.98	90	10.0	9.01	90	75-120
Toluene-d8	10.0	8.95	89	10.0	9.01	90	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.3	103	85-115

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-MW09A-121013	Date Analyzed:	12/16/13 11:12 # 12/16/13 13:02
Lab Samp ID:	L065-02 #L065-02I	Dilution Factor:	1 # 10
Lab File ID:	FL16007A #FL16017A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16003A #FL16016A	Instrument ID :	GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	26	5.0	0.32	0.64
	ETHENE	0.44J	5.0	0.30	0.60
#	METHANE	150	50	1.7	3.4

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-MW09A-121013	Date Analyzed:	12/16/13 11:12
Lab Samp ID:	L065-02	Dilution Factor:	1
Lab File ID:	FL16007A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16003A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	26	5.0	0.32	0.64
ETHENE	0.44J	5.0	0.30	0.60
METHANE	86E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-MW09A-121013	Date Analyzed:	12/16/13 13:02
Lab Samp ID:	L065-02I	Dilution Factor:	10
Lab File ID:	FL16017A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	24J	50	3.2	6.4
ETHENE	ND	50	3.0	6.0
METHANE	150	50	1.7	3.4

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/10/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/12/13
Batch No. : 13L065	Date Extracted: 12/16/13 09:00
Sample ID: 21-IP07-121013	Date Analyzed: 12/16/13 13:12 # 12/16/13 13:32
Lab Samp ID: L065-03I #L065-03J	Dilution Factor: 2 # 400
Lab File ID: FL16018A #FL16020A	Matrix : WATER
Ext Btch ID: DGL009W	% Moisture : NA
Calib. Ref.: FL16016A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	90	10	0.64	1.3
	ETHENE	30	10	0.60	1.2
#	METHANE	7500	2000	68	140

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-IP07-121013	Date Analyzed:	12/16/13 13:12
Lab Samp ID:	L065-03I	Dilution Factor:	2
Lab File ID:	FL16018A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	90	10	0.64	1.3
ETHENE	30	10	0.60	1.2
METHANE	200E	10	0.34	0.68

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-IP07-121013DL	Date Analyzed:	12/16/13 13:32
Lab Samp ID:	L065-03J	Dilution Factor:	400
Lab File ID:	FL16020A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	2000	130	260
ETHENE	ND	2000	120	240
METHANE	7500	2000	68	140

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/10/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/12/13
Batch No. : 13L065	Date Extracted: 12/16/13 09:00
Sample ID: 21-IP07-121013-D	Date Analyzed: 12/16/13 13:47 # 12/16/13 14:13
Lab Samp ID: L065-04I #L065-04J	Dilution Factor: 2 # 400
Lab File ID: FL16021A #FL16022A	Matrix : WATER
Ext Btch ID: DGL009W	% Moisture : NA
Calib. Ref.: FL16016A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	87	10	0.64	1.3
	ETHENE	29	10	0.60	1.2
#	METHANE	6600	2000	68	140

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-IP07-121013-D	Date Analyzed:	12/16/13 13:47
Lab Samp ID:	L065-04I	Dilution Factor:	2
Lab File ID:	FL16021A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	87	10	0.64	1.3
ETHENE	29	10	0.60	1.2
METHANE	490E	10	0.34	0.68

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-IP07-121013-DDL	Date Analyzed:	12/16/13 14:13
Lab Samp ID:	L065-04J	Dilution Factor:	400
Lab File ID:	FL16022A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	2000	130	260
ETHENE	ND	2000	120	240
METHANE	6600	2000	68	140

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/10/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/12/13
Batch No. : 13L065	Date Extracted: 12/16/13 09:00
Sample ID: 21-MW02A-121013	Date Analyzed: 12/16/13 11:43 # 12/16/13 14:58
Lab Samp ID: L065-05 #L065-05I	Dilution Factor: 1 # 50
Lab File ID: FL16010A #FL16026A	Matrix : WATER
Ext Btch ID: DGL009W	% Moisture : NA
Calib. Ref.: FL16003A #FL16016A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	28	5.0	0.32	0.64
	ETHENE	0.66J	5.0	0.30	0.60
#	METHANE	1100	250	8.5	17

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-MW02A-121013	Date Analyzed:	12/16/13 11:43
Lab Samp ID:	L065-05	Dilution Factor:	1
Lab File ID:	FL16010A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16003A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	28	5.0	0.32	0.64
ETHENE	0.66J	5.0	0.30	0.60
METHANE	180E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	21-MW02A-121013	Date Analyzed:	12/16/13 14:58
Lab Samp ID:	L065-05I	Dilution Factor:	50
Lab File ID:	FL16026A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	17J	250	16	32
ETHENE	ND	250	15	30
METHANE	1100	250	8.5	17

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/12/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	121013-ER-01	Date Analyzed:	12/16/13 12:15
Lab Samp ID:	L065-06	Dilution Factor:	1
Lab File ID:	FL16013A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16003A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	0.27J	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/16/13
Batch No.	: 13L065	Date Extracted:	12/16/13 09:00
Sample ID:	MBLK1W	Date Analyzed:	12/16/13 10:20
Lab Samp ID:	DGL009WB	Dilution Factor:	1
Lab File ID:	FL16004A	Matrix :	WATER
Ext Btch ID:	DGL009W	% Moisture :	NA
Calib. Ref.:	FL16003A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	ND	5.0	0.17	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L065
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGL009WB	DGL009WL	DGL009WC		
LAB FILE ID:	FL16004A	FL16005A	FL16006A		
DATE EXTRACTED:	12/16/1309:00	12/16/1309:00	12/16/1309:00	DATE COLLECTED:	NA
DATE ANALYZED:	12/16/1310:20	12/16/1310:50	12/16/1311:02	DATE RECEIVED:	12/16/13
PREP. BATCH:	DGL009W	DGL009W	DGL009W		
CALIB. REF:	FL16003A	FL16003A	FL16003A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	24.8	98	25.4	25.1	99	1	80-120	30
Ethene	ND	23.7	22.6	95	23.7	23.0	97	2	80-120	30
Methane	ND	13.6	13.0	96	13.6	13.1	96	1	80-120	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L065
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	21-MW02A-121013				
LAB SAMP ID:	L065-05	L065-05M	L065-05S		
LAB FILE ID:	FL16010A	FL16011A	FL16012A		
DATE EXTRACTED:	12/16/1309:00	12/16/1309:00	12/16/1309:00	DATE COLLECTED:	12/10/13
DATE ANALYZED:	12/16/1311:43	12/16/1311:52	12/16/1312:03	DATE RECEIVED:	12/12/13
PREP. BATCH:	DGL009W	DGL009W	DGL009W		
CALIB. REF:	FL16003A	FL16003A	FL16003A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	27.7	25.4	50.5	90	25.4	51.5	94	2	80-120	30
Ethene	0.657J	23.7	19.5	80	23.7	19.9	81	2	80-120	30
Methane	179E	13.6	182	24*	13.6	184	38*	1	80-120	30

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/12/13
Batch No.	: 13L065A	Date Extracted:	12/12/13 19:21
Sample ID:	121013-TB02	Date Analyzed:	12/12/13 19:21
Lab Samp ID:	L065-07	Dilution Factor:	1
Lab File ID:	RLC213	Matrix	: WATER
Ext Btch ID:	V067L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	ND	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	ND	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
ISOPROPYL BENZENE	ND	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	ND	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	ND	2.0	0.21	0.40
O-XYLENE	ND	0.50	0.10	0.20
XYLENES (TOTAL)	ND	1.0	0.10	0.20
NAPHTHALENE	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	8.88	10.00	88.8	75-120
TOLUENE-D8	9.08	10.00	90.8	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

Revised Report

2004

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/12/13
Batch No.	: 13L065A	Date Extracted:	12/19/13 18:47
Sample ID:	06-MW26-121013	Date Analyzed:	12/19/13 18:47
Lab Samp ID:	L065-09N	Dilution Factor:	1
Lab File ID:	RLC365	Matrix :	WATER
Ext Btch ID:	VO67L16	% Moisture :	NA
Calib. Ref.:	RJC325	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	ND	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	0.11J	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	0.11J	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
ISOPROPYL BENZENE	ND	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	ND	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	0.14J	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	ND	2.0	0.21	0.40
O-XYLENE	ND	0.50	0.10	0.20
XYLENES (TOTAL)	ND	1.0	0.10	0.20
NAPHTHALENE	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.95	10.00	99.5	70-120
4-BROMOFLUOROBENZENE	8.71	10.00	87.1	75-120
TOLUENE-D8	9.04	10.00	90.4	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

Revised Report

2005

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/10/13
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/12/13
Batch No.	: 13L065A	Date Extracted:	12/13/13 12:02
Sample ID:	06-MW25-121013	Date Analyzed:	12/13/13 12:02
Lab Samp ID:	L065-10	Dilution Factor:	1
Lab File ID:	RLC229	Matrix :	WATER
Ext Btch ID:	VO67L11	% Moisture :	NA
Calib. Ref.:	RJC325	Instrument ID :	67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	3.7	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	ND	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	3.8	1.0	0.10	0.20
ISOPROPYL BENZENE	0.88J	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	0.72	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	4.1	2.0	0.21	0.40
O-XYLENE	0.84	0.50	0.10	0.20
XYLENES (TOTAL)	5.0	1.0	0.10	0.20
NAPHTHALENE	2.3	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-120
4-BROMOFLUOROBENZENE	8.57	10.00	85.7	75-120
TOLUENE-D8	9.10	10.00	91.0	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

Revised Report

2006

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/12/13
Batch No.	: 13L065A	Date Extracted:	12/12/13 14:13
Sample ID:	MBLK1W	Date Analyzed:	12/12/13 14:13
Lab Samp ID:	V067L10B	Dilution Factor:	1
Lab File ID:	RLC203	Matrix	: WATER
Ext Btch ID:	V067L10	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	ND	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	ND	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
ISOPROPYL BENZENE	ND	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	ND	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	ND	2.0	0.21	0.40
O-XYLENE	ND	0.50	0.10	0.20
XYLENES (TOTAL)	ND	1.0	0.10	0.20
NAPHTHALENE	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	8.87	10.00	88.7	75-120
TOLUENE-D8	9.23	10.00	92.3	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

Revised Report

2017

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 6 AND 12
BATCH NO.: 13L065A
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V067L10B	V067L10L	V067L10C		
LAB FILE ID:	RLC203	RLC200	RLC201		
DATE EXTRACTED:	12/12/1314:13	12/12/1312:39	12/12/1313:11	DATE COLLECTED:	NA
DATE ANALYZED:	12/12/1314:13	12/12/1312:39	12/12/1313:11	DATE RECEIVED:	12/12/13
PREP. BATCH:	V067L10	V067L10	V067L10		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.1	101	10.0	10.2	102	1	65-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	10.9	109	10.0	11.0	110	1	65-130	30
1,1,2-Trichloroethane	ND	10.0	11.4	114	10.0	11.6	116	2	75-125	30
1,1-Dichloroethane	ND	10.0	10.3	103	10.0	10.3	103	0	70-135	30
1,1-Dichloroethene	ND	10.0	8.60	86	10.0	8.65	86	1	70-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.8	108	10.0	11.1	111	3	55-140	30
1,2,4-Trichlorobenzene	ND	10.0	10.5	105	10.0	10.7	107	2	65-135	30
1,2-Dibromo-3-chloropropane	ND	10.0	11.2	112	10.0	11.5	115	3	50-130	30
1,2-Dichlorobenzene	ND	10.0	10.3	103	10.0	10.5	105	2	70-120	30
1,2-Dichloroethane	ND	10.0	11.0	110	10.0	11.3	113	2	70-130	30
1,2-Dichloropropane	ND	10.0	10.7	107	10.0	10.9	109	1	75-125	30
1,3-Dichlorobenzene	ND	10.0	9.29	93	10.0	9.42	94	1	75-125	30
1,4-Dichlorobenzene	ND	10.0	9.46	95	10.0	9.56	96	1	75-125	30
2-Butanone	ND	50.0	59.1	118	50.0	58.7	117	1	30-150	30
2-Hexanone	ND	50.0	58.1	116	50.0	56.7	113	3	55-130	30
4-Methyl-2-Pentanone	ND	50.0	59.3	119	50.0	58.7	117	1	60-135	30
Acetone	ND	50.0	56.9	114	50.0	57.8	116	2	40-140	30
Benzene	ND	10.0	9.56	96	10.0	9.68	97	1	80-120	30
Bromochloromethane	ND	10.0	11.1	111	10.0	11.3	113	2	65-130	30
Bromodichloromethane	ND	10.0	11.9	119	10.0	11.9	119	1	75-120	30
Bromoform	ND	10.0	9.79	98	10.0	9.93	99	1	70-130	30
Bromomethane	ND	10.0	11.4	114	10.0	11.9	119	4	30-145	30
Carbon Disulfide	ND	10.0	8.37	84	10.0	8.90	89	6	35-160	30
Carbon Tetrachloride	ND	10.0	9.84	98	10.0	9.91	99	1	65-140	30
Chlorobenzene	ND	10.0	9.92	99	10.0	10.0	100	1	80-120	30
Chloroethane	ND	10.0	11.9	119	10.0	12.6	126	6	60-135	30
Chloroform	ND	10.0	11.1	111	10.0	11.2	112	0	65-135	30
Chloromethane	ND	10.0	12.7	127*	10.0	13.2	132*	4	40-125	30
cis-1,2-Dichloroethene	ND	10.0	9.58	96	10.0	9.59	96	0	70-125	30
cis-1,3-Dichloropropene	ND	10.0	10.4	104	10.0	10.8	108	3	70-130	30
Dibromochloromethane	ND	10.0	11.3	113	10.0	11.3	113	0	60-135	30
Ethylbenzene	ND	10.0	9.52	95	10.0	9.69	97	2	75-125	30
Isopropyl Benzene	ND	10.0	9.91	99	10.0	10.0	100	1	75-125	30
Methyl tert-butyl ether	ND	10.0	11.3	113	10.0	11.5	115	2	65-125	30
Methylene Chloride	ND	10.0	10.2	102	10.0	10.4	104	2	55-140	30
Styrene	ND	10.0	10.3	103	10.0	10.4	104	0	65-135	30
Tetrachloroethene	ND	10.0	8.52	85	10.0	8.49	85	0	45-150	30
Toluene	ND	10.0	9.30	93	10.0	9.25	93	0	75-120	30
Trans-1,2-Dichloroethene	ND	10.0	8.58	86	10.0	8.67	87	1	60-140	30
Trans-1,3-Dichloropropene	ND	10.0	10.0	100	10.0	10.2	102	1	55-140	30
Trichloroethene	ND	10.0	9.64	96	10.0	9.63	96	0	70-125	30
Vinyl Acetate	ND	10.0	11.0	110	10.0	11.2	112	2	50-140	30
Vinyl Chloride	ND	10.0	13.2	132	10.0	13.8	138	5	50-145	30
M- AND P-Xylene	ND	20.0	18.9	95	20.0	19.0	95	0	75-130	30
o-Xylene	ND	10.0	9.57	96	10.0	9.54	95	0	80-120	30
Xylenes (Total)	ND	30.0	28.5	95	30.0	28.5	95	0	75-130	30
Naphthalene	ND	10.0	10.9	109	10.0	11.3	113	4	55-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.6	106	70-120
4-Bromofluorobenzene	10.0	8.65	87	10.0	8.65	87	75-120
Toluene-d8	10.0	9.14	91	10.0	9.01	90	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.6	106	85-115

Revised Report

2018

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/13/13
Batch No.	: 13L065A	Date Extracted:	12/13/13 11:31
Sample ID:	MBLK2W	Date Analyzed:	12/13/13 11:31
Lab Samp ID:	V067L11B	Dilution Factor:	1
Lab File ID:	RLC228	Matrix	: WATER
Ext Btch ID:	V067L11	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	ND	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	ND	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
ISOPROPYL BENZENE	ND	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	ND	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	ND	2.0	0.21	0.40
O-XYLENE	ND	0.50	0.10	0.20
XYLENES (TOTAL)	ND	1.0	0.10	0.20
NAPHTHALENE	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	8.74	10.00	87.4	75-120
TOLUENE-D8	9.14	10.00	91.4	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

Revised Report

2019

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 6 AND 12
BATCH NO.: 13L065A
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	V067L11B	V067L11L	V067L11C		
LAB FILE ID:	RLC228	RLC225	RLC226		
DATE EXTRACTED:	12/13/1311:31	12/13/1309:56	12/13/1310:29	DATE COLLECTED:	NA
DATE ANALYZED:	12/13/1311:31	12/13/1309:56	12/13/1310:29	DATE RECEIVED:	12/13/13
PREP. BATCH:	V067L11	V067L11	V067L11		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.12	91	10.0	9.86	99	8	65-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	9.81	98	10.0	10.7	107	9	65-130	30
1,1,2-Trichloroethane	ND	10.0	10.4	104	10.0	11.4	114	9	75-125	30
1,1-Dichloroethane	ND	10.0	9.44	94	10.0	10.2	102	8	70-135	30
1,1-Dichloroethene	ND	10.0	7.72	77	10.0	8.33	83	8	70-130	30
1,2,3-Trichlorobenzene	ND	10.0	9.77	98	10.0	11.0	110	12	55-140	30
1,2,4-Trichlorobenzene	ND	10.0	9.65	96	10.0	10.8	108	11	65-135	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.4	104	10.0	11.3	113	7	50-130	30
1,2-Dichlorobenzene	ND	10.0	9.47	95	10.0	10.4	104	9	70-120	30
1,2-Dichloroethane	ND	10.0	10.1	101	10.0	11.0	110	8	70-130	30
1,2-Dichloropropane	ND	10.0	9.93	99	10.0	10.7	107	8	75-125	30
1,3-Dichlorobenzene	ND	10.0	8.53	85	10.0	9.28	93	8	75-125	30
1,4-Dichlorobenzene	ND	10.0	8.69	87	10.0	9.48	95	9	75-125	30
2-Butanone	ND	50.0	56.2	112	50.0	58.5	117	4	30-150	30
2-Hexanone	ND	50.0	55.3	111	50.0	57.2	114	3	55-130	30
4-Methyl-2-Pentanone	ND	50.0	56.7	113	50.0	59.2	118	4	60-135	30
Acetone	ND	50.0	53.9	108	50.0	56.4	113	5	40-140	30
Benzene	ND	10.0	8.86	89	10.0	9.56	96	8	80-120	30
Bromochloromethane	ND	10.0	10.2	102	10.0	11.0	110	8	65-130	30
Bromodichloromethane	ND	10.0	10.8	108	10.0	11.8	118	9	75-120	30
Bromoform	ND	10.0	8.72	87	10.0	9.42	94	8	70-130	30
Bromomethane	ND	10.0	11.0	110	10.0	10.8	108	2	30-145	30
Carbon Disulfide	ND	10.0	8.55	86	10.0	8.75	87	2	35-160	30
Carbon Tetrachloride	ND	10.0	8.91	89	10.0	9.58	96	7	65-140	30
Chlorobenzene	ND	10.0	9.19	92	10.0	10.0	100	9	80-120	30
Chloroethane	ND	10.0	11.3	113	10.0	11.2	112	1	60-135	30
Chloroform	ND	10.0	10.2	102	10.0	11.0	110	7	65-135	30
Chloromethane	ND	10.0	12.1	121	10.0	11.8	118	3	40-125	30
cis-1,2-Dichloroethene	ND	10.0	8.84	88	10.0	9.49	95	7	70-125	30
cis-1,3-Dichloropropene	ND	10.0	9.88	99	10.0	10.6	106	7	70-130	30
Dibromochloromethane	ND	10.0	10.2	102	10.0	11.2	112	9	60-135	30
Ethylbenzene	ND	10.0	8.90	89	10.0	9.61	96	8	75-125	30
Isopropyl Benzene	ND	10.0	9.22	92	10.0	10.1	101	9	75-125	30
Methyl tert-butyl ether	ND	10.0	10.3	103	10.0	11.2	112	8	65-125	30
Methylene Chloride	ND	10.0	9.22	92	10.0	9.95	100	8	55-140	30
Styrene	ND	10.0	9.51	95	10.0	10.4	104	9	65-135	30
Tetrachloroethene	ND	10.0	7.71	77	10.0	8.37	84	8	45-150	30
Toluene	ND	10.0	8.55	86	10.0	9.25	92	8	75-120	30
Trans-1,2-Dichloroethene	ND	10.0	7.85	78	10.0	8.38	84	7	60-140	30
Trans-1,3-Dichloropropene	ND	10.0	9.23	92	10.0	10.0	100	8	55-140	30
Trichloroethene	ND	10.0	8.85	89	10.0	9.53	95	7	70-125	30
Vinyl Acetate	ND	10.0	11.1	111	10.0	10.7	107	4	50-140	30
Vinyl Chloride	ND	10.0	12.8	128	10.0	12.2	122	4	50-145	30
M- AND P-Xylene	ND	20.0	17.3	87	20.0	19.0	95	9	75-130	30
o-Xylene	ND	10.0	8.93	89	10.0	9.73	97	9	80-120	30
Xylenes (Total)	ND	30.0	26.3	88	30.0	28.8	96	9	75-130	30
Naphthalene	ND	10.0	9.84	98	10.0	11.0	110	11	55-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.4	104	10.0	10.5	105	70-120
4-Bromofluorobenzene	10.0	8.45	84	10.0	8.51	85	75-120
Toluene-d8	10.0	8.98	90	10.0	9.10	91	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.4	104	85-115

Revised Report

2020

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 6 AND 12	Date Received:	12/19/13
Batch No.	: 13L065A	Date Extracted:	12/19/13 12:34
Sample ID:	MBLK3W	Date Analyzed:	12/19/13 12:34
Lab Samp ID:	V067L16B	Dilution Factor:	1
Lab File ID:	RLC353	Matrix	: WATER
Ext Btch ID:	V067L16	% Moisture	: NA
Calib. Ref.:	RJC325	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,1,1-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1,2,2-TETRACHLOROETHANE	ND	0.50	0.11	0.20
1,1,2-TRICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHANE	ND	0.50	0.10	0.20
1,1-DICHLOROETHENE	ND	0.50	0.10	0.20
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15	0.30
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25	0.50
1,2-DICHLOROBENZENE	ND	0.50	0.10	0.20
1,2-DICHLOROETHANE	ND	0.50	0.10	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.10	0.20
1,3-DICHLOROBENZENE	ND	0.50	0.11	0.20
1,4-DICHLOROBENZENE	ND	0.50	0.10	0.20
2-BUTANONE	ND	10	2.0	4.0
2-HEXANONE	ND	10	2.3	4.0
4-METHYL-2-PENTANONE	ND	10	2.1	4.0
ACETONE	ND	10	2.6	5.0
BENZENE	ND	0.50	0.10	0.20
BROMOCHLOROMETHANE	ND	0.50	0.11	0.20
BROMODICHLOROMETHANE	ND	0.50	0.10	0.20
BROMOFORM	ND	1.0	0.15	0.30
BROMOMETHANE	ND	1.0	0.16	0.30
CARBON DISULFIDE	ND	0.50	0.10	0.20
CARBON TETRACHLORIDE	ND	0.50	0.10	0.20
CHLOROBENZENE	ND	0.50	0.10	0.20
CHLOROETHANE	ND	0.50	0.27	0.30
CHLOROFORM	ND	0.50	0.10	0.20
CHLOROMETHANE	ND	0.50	0.15	0.30
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
CIS-1,3-DICHLOROPROPENE	ND	0.50	0.10	0.20
DIBROMOCHLOROMETHANE	ND	0.50	0.10	0.20
ETHYLBENZENE	ND	1.0	0.10	0.20
ISOPROPYL BENZENE	ND	1.0	0.10	0.20
METHYL TERT-BUTYL ETHER	ND	0.50	0.13	0.20
METHYLENE CHLORIDE	ND	2.0	0.50	1.0
STYRENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TOLUENE	ND	0.50	0.10	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRANS-1,3-DICHLOROPROPENE	ND	0.50	0.11	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL ACETATE	ND	1.0	0.25	0.50
VINYL CHLORIDE	ND	0.50	0.12	0.20
M- AND P-XYLENE	ND	2.0	0.21	0.40
O-XYLENE	ND	0.50	0.10	0.20
XYLENES (TOTAL)	ND	1.0	0.10	0.20
NAPHTHALENE	ND	1.0	0.25	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	8.76	10.00	87.6	75-120
TOLUENE-D8	9.02	10.00	90.2	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

Revised Report

2021

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 6 AND 12
BATCH NO.: 13L065A
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK3W				
LAB SAMP ID:	VO67L16B	VO67L16L	VO67L16C		
LAB FILE ID:	RLC353	RLC350	RLC351		
DATE EXTRACTED:	12/19/1312:34	12/19/1310:59	12/19/1311:30	DATE COLLECTED:	NA
DATE ANALYZED:	12/19/1312:34	12/19/1310:59	12/19/1311:30	DATE RECEIVED:	12/19/13
PREP. BATCH:	VO67L16	VO67L16	VO67L16		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.4	104	10.0	10.0	100	3	65-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	10.2	102	10.0	9.90	99	3	65-130	30
1,1,2-Trichloroethane	ND	10.0	11.0	110	10.0	10.6	106	4	75-125	30
1,1-Dichloroethane	ND	10.0	10.5	105	10.0	10.3	103	3	70-135	30
1,1-Dichloroethene	ND	10.0	10.1	101	10.0	9.61	96	5	70-130	30
1,2,3-Trichlorobenzene	ND	10.0	9.89	99	10.0	9.80	98	1	55-140	30
1,2,4-Trichlorobenzene	ND	10.0	9.97	100	10.0	9.72	97	3	65-135	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	9.85	99	3	50-130	30
1,2-Dichlorobenzene	ND	10.0	10.2	102	10.0	9.73	97	5	70-120	30
1,2-Dichloroethane	ND	10.0	11.0	110	10.0	10.6	106	4	70-130	30
1,2-Dichloropropane	ND	10.0	10.9	109	10.0	10.6	106	3	75-125	30
1,3-Dichlorobenzene	ND	10.0	9.45	94	10.0	9.08	91	4	75-125	30
1,4-Dichlorobenzene	ND	10.0	9.54	95	10.0	9.18	92	4	75-125	30
2-Butanone	ND	50.0	53.0	106	50.0	48.7	97	8	30-150	30
2-Hexanone	ND	50.0	52.4	105	50.0	48.7	97	7	55-130	30
4-Methyl-2-Pentanone	ND	50.0	55.7	111	50.0	51.3	103	8	60-135	30
Acetone	ND	50.0	51.3	103	50.0	45.8	92	11	40-140	30
Benzene	ND	10.0	10.5	105	10.0	10.2	102	3	80-120	30
Bromochloromethane	ND	10.0	11.4	114	10.0	11.0	110	4	65-130	30
Bromodichloromethane	ND	10.0	11.7	117	10.0	11.3	113	4	75-120	30
Bromoform	ND	10.0	9.56	96	10.0	9.06	91	5	70-130	30
Bromomethane	ND	10.0	9.48	95	10.0	8.76	88	8	30-145	30
Carbon Disulfide	ND	10.0	7.73	77	10.0	7.34	73	5	35-160	30
Carbon Tetrachloride	ND	10.0	10.4	104	10.0	9.97	100	4	65-140	30
Chlorobenzene	ND	10.0	10.2	102	10.0	10.0	100	2	80-120	30
Chloroethane	ND	10.0	9.97	100	10.0	9.16	92	8	60-135	30
Chloroform	ND	10.0	11.2	112	10.0	10.8	108	4	65-135	30
Chloromethane	ND	10.0	10.4	104	10.0	9.48	95	9	40-125	30
cis-1,2-Dichloroethene	ND	10.0	10.2	102	10.0	9.70	97	5	70-125	30
cis-1,3-Dichloropropene	ND	10.0	10.8	108	10.0	10.5	105	3	70-130	30
Dibromochloromethane	ND	10.0	10.8	108	10.0	10.4	104	4	60-135	30
Ethylbenzene	ND	10.0	10.1	101	10.0	9.80	98	3	75-125	30
Isopropyl Benzene	ND	10.0	10.3	103	10.0	9.99	100	3	75-125	30
Methyl tert-butyl ether	ND	10.0	11.2	112	10.0	10.7	107	4	65-125	30
Methylene Chloride	ND	10.0	10.7	107	10.0	10.2	102	5	55-140	30
Styrene	ND	10.0	10.5	105	10.0	10.3	103	2	65-135	30
Tetrachloroethene	ND	10.0	9.42	94	10.0	9.31	93	1	45-150	30
Toluene	ND	10.0	9.83	98	10.0	9.65	97	2	75-120	30
Trans-1,2-Dichloroethene	ND	10.0	10.0	100	10.0	9.68	97	3	60-140	30
Trans-1,3-Dichloropropene	ND	10.0	9.93	99	10.0	9.46	95	5	55-140	30
Trichloroethene	ND	10.0	10.7	107	10.0	10.4	104	3	70-125	30
Vinyl Acetate	ND	10.0	9.98	100	10.0	9.02	90	10	50-140	30
Vinyl Chloride	ND	10.0	10.9	109	10.0	9.81	98	10	50-145	30
M- AND P-Xylene	ND	20.0	19.8	99	20.0	19.5	97	2	75-130	30
o-Xylene	ND	10.0	9.90	99	10.0	9.68	97	2	80-120	30
Xylenes (Total)	ND	30.0	29.7	99	30.0	29.2	97	2	75-130	30
Naphthalene	ND	10.0	10.2	102	10.0	9.88	99	3	55-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.1	101	10.0	10.0	100	70-120
4-Bromofluorobenzene	10.0	8.59	86	10.0	8.61	86	75-120
Toluene-d8	10.0	8.76	88	10.0	8.85	88	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.5	105	85-115

Revised Report

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 6 AND 12
BATCH NO.: 13L065A
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	06-MW26-121013				
LAB SAMP ID:	L065-09N	L065-09M	L065-09S		
LAB FILE ID:	RLC365	RLC366	RLC367		
DATE EXTRACTED:	12/19/1318:47	12/19/1319:20	12/19/1319:52	DATE COLLECTED:	12/10/13
DATE ANALYZED:	12/19/1318:47	12/19/1319:20	12/19/1319:52	DATE RECEIVED:	12/12/13
PREP. BATCH:	V067L16	V067L16	V067L16		
CALIB. REF:	RJC325	RJC325	RJC325		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.9	109	10.0	11.3	113	3	65-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	10.6	106	10.0	10.5	105	0	65-130	30
1,1,2-Trichloroethane	ND	10.0	11.4	114	10.0	11.4	114	0	75-125	30
1,1-Dichloroethane	ND	10.0	10.9	109	10.0	11.3	113	3	70-135	30
1,1-Dichloroethene	ND	10.0	10.5	105	10.0	10.8	108	3	70-130	30
1,2,3-Trichlorobenzene	ND	10.0	10.3	103	10.0	10.5	105	3	55-140	30
1,2,4-Trichlorobenzene	ND	10.0	10.2	102	10.0	10.5	105	2	65-135	30
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	9.96	100	2	50-130	30
1,2-Dichlorobenzene	ND	10.0	10.4	104	10.0	10.5	105	1	70-120	30
1,2-Dichloroethane	ND	10.0	11.3	113	10.0	11.6	116	2	70-130	30
1,2-Dichloropropane	ND	10.0	11.3	113	10.0	11.5	115	2	75-125	30
1,3-Dichlorobenzene	ND	10.0	9.69	97	10.0	9.95	100	3	75-125	30
1,4-Dichlorobenzene	ND	10.0	9.81	98	10.0	10.0	100	2	75-125	30
2-Butanone	ND	50.0	54.3	109	50.0	55.5	111	2	30-150	30
2-Hexanone	ND	50.0	52.3	105	50.0	53.4	107	2	55-130	30
4-Methyl-2-Pentanone	ND	50.0	51.5	103	50.0	53.5	107	4	60-135	30
Acetone	ND	50.0	62.1	124	50.0	65.9	132	6	40-140	30
Benzene	ND	10.0	11.0	110	10.0	11.3	113	2	80-120	30
Bromochloromethane	ND	10.0	11.6	116	10.0	12.0	120	3	65-130	30
Bromodichloromethane	ND	10.0	12.0	120	10.0	12.3	123*	2	75-120	30
Bromoform	ND	10.0	9.43	94	10.0	9.46	95	0	70-130	30
Bromomethane	ND	10.0	9.92	99	10.0	10.0	100	1	30-145	30
Carbon Disulfide	0.106J	10.0	8.70	86	10.0	9.30	92	7	35-160	30
Carbon Tetrachloride	ND	10.0	10.6	106	10.0	11.0	110	4	65-140	30
Chlorobenzene	ND	10.0	10.8	108	10.0	10.8	108	0	80-120	30
Chloroethane	ND	10.0	10.7	107	10.0	10.9	109	2	60-135	30
Chloroform	ND	10.0	11.6	116	10.0	11.9	119	3	65-135	30
Chloromethane	ND	10.0	10.4	104	10.0	10.3	103	2	40-125	30
cis-1,2-Dichloroethene	0.105J	10.0	10.5	104	10.0	10.9	108	4	70-125	30
cis-1,3-Dichloropropene	ND	10.0	10.7	107	10.0	10.9	109	2	70-130	30
Dibromochloromethane	ND	10.0	10.9	109	10.0	10.9	109	0	60-135	30
Ethylbenzene	ND	10.0	10.5	105	10.0	10.6	106	0	75-125	30
Isopropyl Benzene	ND	10.0	10.8	108	10.0	11.0	110	2	75-125	30
Methyl tert-butyl ether	ND	10.0	11.7	117	10.0	11.9	119	2	65-125	30
Methylene Chloride	ND	10.0	10.6	106	10.0	11.0	110	3	55-140	30
Styrene	ND	10.0	10.8	108	10.0	11.0	110	2	65-135	30
Tetrachloroethene	ND	10.0	9.77	98	10.0	10.0	100	3	45-150	30
Toluene	ND	10.0	10.5	105	10.0	10.5	105	1	75-120	30
Trans-1,2-Dichloroethene	ND	10.0	10.4	104	10.0	10.8	108	4	60-140	30
Trans-1,3-Dichloropropene	ND	10.0	9.66	97	10.0	9.78	98	1	55-140	30
Trichloroethene	0.145J	10.0	11.1	109	10.0	11.5	114	4	70-125	30
Vinyl Acetate	ND	10.0	9.26	93	10.0	8.27	83	11	50-140	30
Vinyl Chloride	ND	10.0	11.2	112	10.0	11.1	111	1	50-145	30
M- AND P-Xylene	ND	20.0	21.1	106	20.0	21.1	105	0	75-130	30
o-Xylene	ND	10.0	10.2	102	10.0	10.4	104	2	80-120	30
Xylenes (Total)	ND	30.0	31.3	104	30.0	31.4	105	0	75-130	30
Naphthalene	ND	10.0	10.2	102	10.0	10.7	107	5	55-140	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.86	99	10.0	10.1	101	70-120
4-Bromofluorobenzene	10.0	8.63	86	10.0	8.69	87	75-120
Toluene-d8	10.0	8.90	89	10.0	8.82	88	85-120
Dibromofluoromethane	10.0	10.5	105	10.0	10.6	106	85-115

Revised Report

2023

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CLIENT: **TREVET**

PROJECT: **TREASURE ISLAND IR SITES 6 AND 12**

SDG: **13L099**

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GC/MS-VOA	**	2000 –
GC/MS-SVOA	**	3000 –
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	METHOD SM4500NO3	8000 – 8007
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 01-03-2014
EMAX Batch No.: 13L099

Attn: Gerald Tamashiro

TREVET
9888 Carroll Centre Rd, Ste 228
San Diego CA 92126

Subject: Laboratory Report
Project: Treasure Island IR Sites 6 and 12

Enclosed is the Laboratory report for samples received on 12/14/13.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
06-MW26-121313	L099-01	12/13/13	WATER	NITRATE-N
06-MW25-121313	L099-02	12/13/13	WATER	NITRATE-N
06-MW26-121313MS	L099-01M	12/13/13	WATER	NITRATE-N
06-MW26-121313DUP	L099-01D	12/13/13	WATER	NITRATE-N

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

COC NUMBER 121313-1

CHAIN-OF-CUSTODY RECORD

PROJECT NAME	PURCHASE ORDER NO.
Treasure Island Basewide Monitoring	Send Invoice to Trevet
PROJECT LOCATION	PROJECT NO.
NAVSTA Treasure Island	A111
SAMPLER NAME	AIRBILL NUMBER
JH, JM	
PROJECT CONTACT	PROJECT CONTACT PHONE NUMBER
Gerald Tamashiro - TREVET	(714) 200-3826

LABORATORY NAME: EMAX (310) 618-8889

LABORATORY ID (FOR LABORATORY): 13L099

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	PRESERVATION	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs (EPA 8260B) Site 6 list	TPH-P and TPH-E (EPA 8015B)	Dissolved gasses (RSK-175)	Sulfate (EPA 300.0)	Chloride (EPA 300.0)	Alkalinity (SM 2320B)	Nitrate (SM 4500NO3E)	Sulfide (SM 4500S2D)	COMMENTS
1	06-MW26-121313	12/13/13	0820	3	No	X		W	10							X		
2	06-MW25-121313	12/13/13	0825	1	No	X		W	10							X		

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	12/13/13	
COMPANY: Trevet	TIME: 1200	COMPANY
RELINQUISHED BY (Signature)	DATE: 12/14/13	RECEIVED BY (Signature)
COMPANY	TIME: 1130	COMPANY: Emax
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

IR Site 6

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: 2.6 SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:

Cooler #3

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 136099
☑ Fedex ☐ UPS ☐ GSO ☐ Others_____	8043 7062 0592	Recipient Rtel
☐ EMAX Courier ☐ Client Delivery		Date 12/14/13 Time 11:30

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT

Safety Issues (if any) ☐ High concentrations expected ☐ Superfund Site samples ☐ Rad screening required

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other _____		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged _____		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	(3) ☑ Cooler 1 2.6 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	*A - S/N 130538505*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code

☐ **Continue to next page.**

REVIEWS

Sample Labeling _____ Date 12/14/13 12/16/13

SRF _____ Date 12/16/13

PM LP for TC Date 12/17/13

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with latest sampling date and 1 minute past the time of the last sample collected on the same date.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

TREVET

TREASURE ISLAND IR SITES 6 AND 12

METHOD SM4500NO3
NITRATE-N

SDG#: 13L099

CASE NARRATIVE

Client : TREVET

Project : TREASURE ISLAND IR SITES 6 AND 12

SDG : 13L099

METHOD SM4500NO3
NITRATE-N

A total of two (2) water samples were received on 12/14/13 for Nitrate-N analysis, Method SM4500NO3 in accordance with Standard Methods for the Examination of Water and Wastewater, 21st Edition.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source. Continuing calibration verifications were carried out at the frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for NAL002WL/C were all within QC limits.

Matrix QC Sample
Matrix QC sample was analyzed at the frequency prescribed by the project.
Percent recovery for L099-01M was within project QC limits.
Sample duplicate was also analyzed with the samples. RPD was within project limit.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

METHOD SM4500NO3
NITRATE-N

Client : TREVET
Project : TREASURE ISLAND IR SITES 6 AND 12
Batch No. : 13L099

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAL002WB	ND	1	NA	0.1	0.01	0.02	12/20/1317:09	NA	13NAL00210	13NAL002	NAL002W	NA	NA
LCS1W	NAL002WL	0.507	1	NA	0.1	0.01	0.02	12/20/1317:09	NA	13NAL00211	13NAL002	NAL002W	NA	NA
LCD1W	NAL002WC	0.501	1	NA	0.1	0.01	0.02	12/20/1317:09	NA	13NAL00212	13NAL002	NAL002W	NA	NA
06-MW26-121313	L099-01	ND	1	NA	0.1	0.01	0.02	12/20/1317:10	NA	13NAL00213	13NAL002	NAL002W	12/13/1308:20	12/14/13
06-MW26-121313DUP	L099-01D	ND	1	NA	0.1	0.01	0.02	12/20/1317:10	NA	13NAL00214	13NAL002	NAL002W	12/13/1308:20	12/14/13
06-MW26-121313MS	L099-01M	0.476	1	NA	0.1	0.01	0.02	12/20/1317:10	NA	13NAL00215	13NAL002	NAL002W	12/13/1308:20	12/14/13
06-MW25-121313	L099-02	ND	1	NA	0.1	0.01	0.02	12/20/1317:11	NA	13NAL00216	13NAL002	NAL002W	12/13/1308:25	12/14/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 6 AND 12
BATCH NO. : 13L099
METHOD : SM4500NO3

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	NAL002WB	NAL002WL	NAL002WC
LAB FILE ID :	13NAL00210	13NAL00211	13NAL00212
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	12/20/1317:09	12/20/1317:09	12/20/1317:09
PREP BATCH :	NAL002W	NAL002W	NAL002W
CALIBRATION REF:	13NAL002	13NAL002	13NAL002

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
NITRATE-N	ND	0.5	0.507	101	0.5	0.501	100	1	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 6 AND 12
BATCH NO. : 13L099
METHOD : SM4500NO3

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1
SAMPLE ID :	06-MW26-121313	06-MW26-121313MS
LAB SAMPLE ID :	L099-01	L099-01M
LAB FILE ID :	13NAL00213	13NAL00215
DATE PREPARED :	NA	NA
DATE ANALYZED :	12/20/1317:10	12/20/1317:10
PREP BATCH :	NAL002W	NAL002W
CALIBRATION REF:	13NAL002	13NAL002

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	QC LIMIT (%)
NITRATE-N	ND	0.5	0.476	95	80-120

00051

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 6 AND 12
BATCH NO. : 13L099
METHOD : SM4500NO3

MATRIX	: WATER	
DILUTION FACTOR	: 1	1
SAMPLE ID	: 06-MW26-121313	06-MW26-121313DUP
LAB SAMPLE ID	: L099-01	L099-01D
LAB FILE ID	: 13NAL00213	13NAL00214
DATE PREPARED	: NA	NA
DATE ANALYZED	: 12/20/1317:10	12/20/1317:10
PREP BATCH	: NAL002W	NAL002W
CALIBRATION REF	: 13NAL002	13NAL002

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
NITRATE-N	ND	ND	0	20

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 11:33
Sample ID:	24-TW-27-121213	Date Analyzed:	12/17/13 11:33
Lab Samp ID:	L101-01	Dilution Factor:	1
Lab File ID:	RLQ370	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.26J	0.50	0.10	0.20
TETRACHLOROETHENE	0.21J	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.17J	0.50	0.10	0.20
TRICHLOROETHENE	0.16J	0.50	0.10	0.20
VINYL CHLORIDE	0.48J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	9.68	10.00	96.8	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 12:03
Sample ID:	24-EW32-121213	Date Analyzed:	12/17/13 12:03
Lab Samp ID:	L101-02	Dilution Factor:	1
Lab File ID:	RLQ371	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.31J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	0.17J	0.50	0.10	0.20
VINYL CHLORIDE	0.69	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	11.3	10.00	113	75-120
TOLUENE-D8	9.32	10.00	93.2	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 12:33
Sample ID:	24-EW33-121213	Date Analyzed:	12/17/13 12:33
Lab Samp ID:	L101-03	Dilution Factor:	1
Lab File ID:	RLQ372	Matrix	: WATER
Ext Btch ID:	VO05L09	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.4	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.98	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.73	10.00	97.3	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 13:04
Sample ID:	24-EW34-121213	Date Analyzed:	12/17/13 13:04
Lab Samp ID:	L101-04	Dilution Factor:	1
Lab File ID:	RLQ373	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.60	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.53	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	1.1	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 13:33
Sample ID:	24-TW-53-121213	Date Analyzed:	12/17/13 13:33
Lab Samp ID:	L101-05	Dilution Factor:	1
Lab File ID:	RLQ374	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.27J	0.50	0.10	0.20
TRICHLOROETHENE	0.45J	0.50	0.10	0.20
VINYL CHLORIDE	4.6	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.75	10.00	97.5	85-120
DIBROMOFLUOROMETHANE	10.9	10.00	109	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 14:03
Sample ID:	24-TW-41-121213	Date Analyzed:	12/17/13 14:03
Lab Samp ID:	L101-06	Dilution Factor:	1
Lab File ID:	RLQ375	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	17	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.39J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	33	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	10.8	10.00	108	75-120
TOLUENE-D8	9.70	10.00	97.0	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 14:34
Sample ID:	24-IW5-121213	Date Analyzed:	12/17/13 14:34
Lab Samp ID:	L101-07	Dilution Factor:	1
Lab File ID:	RLQ376	Matrix	: WATER
Ext Btch ID:	VO05L09	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	41	0.50	0.10	0.20
TETRACHLOROETHENE	0.57	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.77	0.50	0.10	0.20
TRICHLOROETHENE	2.8	0.50	0.10	0.20
VINYL CHLORIDE	15	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	11.3	10.00	113	75-120
TOLUENE-D8	9.56	10.00	95.6	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 15:05
Sample ID:	24-IW5-121213-D	Date Analyzed:	12/17/13 15:05
Lab Samp ID:	L101-08	Dilution Factor:	1
Lab File ID:	RLQ377	Matrix	: WATER
Ext Btch ID:	VO05L09	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	43	0.50	0.10	0.20
TETRACHLOROETHENE	0.60	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.77	0.50	0.10	0.20
TRICHLOROETHENE	2.9	0.50	0.10	0.20
VINYL CHLORIDE	14	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	11.3	10.00	113	75-120
TOLUENE-D8	9.54	10.00	95.4	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 11:02
Sample ID:	24-TW-11-121213	Date Analyzed:	12/17/13 11:02
Lab Samp ID:	L101-09	Dilution Factor:	1
Lab File ID:	RLQ369	Matrix	: WATER
Ext Btch ID:	VO05L09	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	69	0.50	0.10	0.20
TETRACHLOROETHENE	50	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	1.5	0.50	0.10	0.20
TRICHLOROETHENE	74	0.50	0.10	0.20
VINYL CHLORIDE	39	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.88	10.00	98.8	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 15:34 # 12/18/13 16:58
Sample ID:	24-EW11-121213	Date Analyzed:	12/17/13 15:34 # 12/18/13 16:58
Lab Samp ID:	L101-10 #L101-10I	Dilution Factor:	1 # 10
Lab File ID:	RLQ378 #RLQ416	Matrix	: WATER
Ext Btch ID:	VO05L09 #VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056 #RJQ056	Instrument ID	: T-O05

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	CIS-1,2-DICHLOROETHENE	160	5.0	1.0	2.0
	TETRACHLOROETHENE	ND	0.50	0.15	0.20
	TRANS-1,2-DICHLOROETHENE	8.4	0.50	0.10	0.20
	TRICHLOROETHENE	0.10J	0.50	0.10	0.20
#	VINYL CHLORIDE	160	5.0	1.2	2.0

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
	4-BROMOFLUOROBENZENE	10.9	10.00	109	75-120
	TOLUENE-D8	10.0	10.00	100	85-120
	DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115
#	1,2-DICHLOROETHANE-D4	111	100.0	111	70-120
#	4-BROMOFLUOROBENZENE	113	100.0	113	75-120
#	TOLUENE-D8	98.0	100.0	98.0	85-120
#	DIBROMOFLUOROMETHANE	107	100.0	107	85-115

Members of the Associated File

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 15:34
Sample ID:	24-EW11-121213	Date Analyzed:	12/17/13 15:34
Lab Samp ID:	L101-10	Dilution Factor:	1
Lab File ID:	RLQ378	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	130E	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	8.4	0.50	0.10	0.20
TRICHLOROETHENE	0.10J	0.50	0.10	0.20
VINYL CHLORIDE	110E	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
4-BROMOFLUOROBENZENE	10.9	10.00	109	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 16:58
Sample ID:	24-EW11-121213DL	Date Analyzed:	12/18/13 16:58
Lab Samp ID:	L101-10I	Dilution Factor:	10
Lab File ID:	RLQ416	Matrix :	WATER
Ext Btch ID:	VO05L10	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	160	5.0	1.0	2.0
TETRACHLOROETHENE	ND	5.0	1.5	2.0
TRANS-1,2-DICHLOROETHENE	10	5.0	1.0	2.0
TRICHLOROETHENE	ND	5.0	1.0	2.0
VINYL CHLORIDE	160	5.0	1.2	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	100.0	111	70-120
4-BROMOFLUOROBENZENE	113	100.0	113	75-120
TOLUENE-D8	98.0	100.0	98.0	85-120
DIBROMOFLUOROMETHANE	107	100.0	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 13:55
Sample ID:	121113-TB-01	Date Analyzed:	12/18/13 13:55
Lab Samp ID:	L101-11	Dilution Factor:	1
Lab File ID:	RLQ410	Matrix :	WATER
Ext Btch ID:	VO05L10	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	11.7	10.00	117	75-120
TOLUENE-D8	9.79	10.00	97.9	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 15:27
Sample ID:	24-EW30-121113	Date Analyzed:	12/18/13 15:27
Lab Samp ID:	L101-12	Dilution Factor:	1
Lab File ID:	RLQ413	Matrix	: WATER
Ext Btch ID:	VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.3	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	2.4	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-120
4-BROMOFLUOROBENZENE	11.6	10.00	116	75-120
TOLUENE-D8	9.60	10.00	96.0	85-120
DIBROMOFLUOROMETHANE	10.7	10.00	107	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 13:24
Sample ID:	24-IW21-121113	Date Analyzed:	12/18/13 13:24
Lab Samp ID:	L101-13N	Dilution Factor:	1
Lab File ID:	RLQ409	Matrix	: WATER
Ext Btch ID:	VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.78	0.50	0.10	0.20
TETRACHLOROETHENE	0.17J	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.37J	0.50	0.10	0.20
TRICHLOROETHENE	0.17J	0.50	0.10	0.20
VINYL CHLORIDE	0.20J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	11.1	10.00	111	75-120
TOLUENE-D8	9.69	10.00	96.9	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 16:36
Sample ID:	24-EW16-121113	Date Analyzed:	12/17/13 16:36
Lab Samp ID:	L101-14	Dilution Factor:	1
Lab File ID:	RLQ380	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.2	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.17J	0.50	0.10	0.20
TRICHLOROETHENE	0.83	0.50	0.10	0.20
VINYL CHLORIDE	0.39J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	11.4	10.00	114	75-120
TOLUENE-D8	9.82	10.00	98.2	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 17:07
Sample ID:	24-BB76-121113	Date Analyzed:	12/17/13 17:07
Lab Samp ID:	L101-15	Dilution Factor:	1
Lab File ID:	RLQ381	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.72	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.8	10.00	118	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.75	10.00	97.5	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 14:26
Sample ID:	121113-SB-01	Date Analyzed:	12/18/13 14:26
Lab Samp ID:	L101-16	Dilution Factor:	1
Lab File ID:	RLQ411	Matrix	: WATER
Ext Btch ID:	VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-120
4-BROMOFLUOROBENZENE	11.3	10.00	113	75-120
TOLUENE-D8	9.75	10.00	97.5	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/18/13 14:56
Sample ID:	121113-ER-01	Date Analyzed:	12/18/13 14:56
Lab Samp ID:	L101-17	Dilution Factor:	1
Lab File ID:	RLQ412	Matrix	: WATER
Ext Btch ID:	VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-120
4-BROMOFLUOROBENZENE	11.4	10.00	114	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.8	10.00	108	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 17:37
Sample ID:	24-BB89-121213	Date Analyzed:	12/17/13 17:37
Lab Samp ID:	L101-18	Dilution Factor:	1
Lab File ID:	RLQ382	Matrix	: WATER
Ext Btch ID:	VO05L09	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.12J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.11J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	70-120
4-BROMOFLUOROBENZENE	11.1	10.00	111	75-120
TOLUENE-D8	9.34	10.00	93.4	85-120
DIBROMOFLUOROMETHANE	11.0	10.00	110	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/17/13
Batch No.	: 13L101	Date Extracted:	12/17/13 10:32
Sample ID:	MBLK1W	Date Analyzed:	12/17/13 10:32
Lab Samp ID:	VO05L09B	Dilution Factor:	1
Lab File ID:	RLQ368	Matrix :	WATER
Ext Btch ID:	VO05L09	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.94	10.00	99.4	70-120
4-BROMOFLUOROBENZENE	11.1	10.00	111	75-120
TOLUENE-D8	9.56	10.00	95.6	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO05L09B	VO05L09L	VO05L09C		
LAB FILE ID:	RLQ368	RLQ365	RLQ366		
DATE EXTRACTED:	12/17/1310:32	12/17/1308:59	12/17/1309:29	DATE COLLECTED:	NA
DATE ANALYZED:	12/17/1310:32	12/17/1308:59	12/17/1309:29	DATE RECEIVED:	12/17/13
PREP. BATCH:	VO05L09	VO05L09	VO05L09		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.68	97	10.0	9.66	97	0	70-125	30
Tetrachloroethene	ND	10.0	7.87	79	10.0	8.04	80	2	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.6	106	10.0	10.0	100	5	60-140	30
Trichloroethene	ND	10.0	9.50	95	10.0	9.41	94	1	70-125	30
Vinyl Chloride	ND	10.0	11.0	110	10.0	11.2	112	2	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.1	101	10.0	9.94	99	70-120
4-Bromofluorobenzene	10.0	10.3	103	10.0	10.7	107	75-120
Toluene-d8	10.0	9.75	98	10.0	9.88	99	85-120
Dibromofluoromethane	10.0	10.4	104	10.0	9.98	100	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/18/13
Batch No.	: 13L101	Date Extracted:	12/18/13 12:21
Sample ID:	MBLK2W	Date Analyzed:	12/18/13 12:21
Lab Samp ID:	VO05L10B	Dilution Factor:	1
Lab File ID:	RLQ407	Matrix :	WATER
Ext Btch ID:	VO05L10	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.9	10.00	109	75-120
TOLUENE-D8	9.36	10.00	93.6	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: SW5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	VO05L10B	VO05L10L	VO05L10C		
LAB FILE ID:	RLQ407	RLQ404	RLQ405		
DATE EXTRACTED:	12/18/1312:21	12/18/1310:47	12/18/1311:19	DATE COLLECTED:	NA
DATE ANALYZED:	12/18/1312:21	12/18/1310:47	12/18/1311:19	DATE RECEIVED:	12/18/13
PREP. BATCH:	VO05L10	VO05L10	VO05L10		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.74	97	10.0	9.82	98	1	70-125	30
Tetrachloroethene	ND	10.0	7.80	78	10.0	7.63	76	2	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.3	103	10.0	10.1	101	2	60-140	30
Trichloroethene	ND	10.0	9.41	94	10.0	9.51	95	1	70-125	30
Vinyl Chloride	ND	10.0	10.7	107	10.0	10.5	105	2	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.2	102	70-120
4-Bromofluorobenzene	10.0	10.9	109	10.0	11.0	110	75-120
Toluene-d8	10.0	9.32	93	10.0	9.47	95	85-120
Dibromofluoromethane	10.0	10.4	104	10.0	10.4	104	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-EW30-121113				
LAB SAMP ID:	L101-12	L101-12M	L101-12S		
LAB FILE ID:	RLQ413	RLQ414	RLQ415		
DATE EXTRACTED:	12/18/1315:27	12/18/1315:57	12/18/1316:28	DATE COLLECTED:	12/11/13
DATE ANALYZED:	12/18/1315:27	12/18/1315:57	12/18/1316:28	DATE RECEIVED:	12/14/13
PREP. BATCH:	VO05L10	VO05L10	VO05L10		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	1.26	10.0	11.4	101	10.0	11.1	98	3	70-125	30
Tetrachloroethene	ND	10.0	7.66	77	10.0	7.44	74	3	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.9	109	10.0	10.9	109	1	60-140	30
Trichloroethene	ND	10.0	9.32	93	10.0	9.69	97	4	70-125	30
Vinyl Chloride	2.41	10.0	13.2	108	10.0	13.0	106	2	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	11.2	112	10.0	10.9	109	70-120
4-Bromofluorobenzene	10.0	11.0	110	10.0	11.1	111	75-120
Toluene-d8	10.0	9.90	99	10.0	9.30	93	85-120
Dibromofluoromethane	10.0	10.6	106	10.0	10.5	105	85-115

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW32-121213	Date Analyzed:	12/17/13 12:58 # 12/17/13 14:53 ## 12/17/13 15:03
Lab Samp ID:	L101-02 #L101-02I ##L101-02J	Dilution Factor:	1 # 2 ## 200
Lab File ID:	FL17021A #FL17031A ##FL17032A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A #FL17030A ##FL17030A	Instrument ID :	GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	ETHANE	110	10	0.64	1.3
	ETHENE	ND	5.0	0.30	0.60
##	METHANE	4800	1000	34	68

Members of the First Associated File
Members of the Second Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW32-121213	Date Analyzed:	12/17/13 12:58
Lab Samp ID:	L101-02	Dilution Factor:	1
Lab File ID:	FL17021A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	120E	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	110E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW32-121213DL	Date Analyzed:	12/17/13 14:53
Lab Samp ID:	L101-02I	Dilution Factor:	2
Lab File ID:	FL17031A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	110	10	0.64	1.3
ETHENE	ND	10	0.60	1.2
METHANE	420E	10	0.34	0.68

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW32-121213DL	Date Analyzed:	12/17/13 15:03
Lab Samp ID:	L101-02J	Dilution Factor:	200
Lab File ID:	FL17032A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	91J	1000	64	130
ETHENE	ND	1000	60	120
METHANE	4800	1000	34	68

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L101	Date Extracted: 12/17/13 08:25
Sample ID: 24-TW-41-121213	Date Analyzed: 12/17/13 13:08 # 12/17/13 15:16
Lab Samp ID: L101-06 #L101-06I	Dilution Factor: 1 # 100
Lab File ID: FL17022A #FL17033A	Matrix : WATER
Ext Btch ID: DGL010W	% Moisture : NA
Calib. Ref.: FL17016A #FL17030A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	24	5.0	0.32	0.64
	ETHENE	8.7	5.0	0.30	0.60
#	METHANE	2300	500	17	34

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-TW-41-121213	Date Analyzed:	12/17/13 13:08
Lab Samp ID:	L101-06	Dilution Factor:	1
Lab File ID:	FL17022A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	24	5.0	0.32	0.64
ETHENE	8.7	5.0	0.30	0.60
METHANE	200E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-TW-41-121213DL	Date Analyzed:	12/17/13 15:16
Lab Samp ID:	L101-06I	Dilution Factor:	100
Lab File ID:	FL17033A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	500	32	64
ETHENE	ND	500	30	60
METHANE	2300	500	17	34

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L101	Date Extracted: 12/17/13 08:25
Sample ID: 24-TW-11-121213	Date Analyzed: 12/17/13 15:25 # 12/17/13 15:35
Lab Samp ID: L101-09I #L101-09J	Dilution Factor: 10 # 800
Lab File ID: FL17034A #FL17035A	Matrix : WATER
Ext Btch ID: DGL010W	% Moisture : NA
Calib. Ref.: FL17030A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	230	50	3.2	6.4
	ETHENE	150	50	3.0	6.0
#	METHANE	15000	4000	140	270

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-TW-11-121213	Date Analyzed:	12/17/13 15:25
Lab Samp ID:	L101-09I	Dilution Factor:	10
Lab File ID:	FL17034A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	230	50	3.2	6.4
ETHENE	150	50	3.0	6.0
METHANE	1800E	50	1.7	3.4

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-TW-11-121213DL	Date Analyzed:	12/17/13 15:35
Lab Samp ID:	L101-09J	Dilution Factor:	800
Lab File ID:	FL17035A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	4000	260	510
ETHENE	ND	4000	240	480
METHANE	15000	4000	140	270

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L101	Date Extracted: 12/17/13 08:25
Sample ID: 24-EW11-121213	Date Analyzed: 12/17/13 13:31 # 12/17/13 15:45
Lab Samp ID: L101-10 #L101-10I	Dilution Factor: 1 # 20
Lab File ID: FL17024A #FL17036A	Matrix : WATER
Ext Btch ID: DGL010W	% Moisture : NA
Calib. Ref.: FL17016A #FL17030A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	11	5.0	0.32	0.64
	ETHENE	56	5.0	0.30	0.60
#	METHANE	370	100	3.4	6.8

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW11-121213	Date Analyzed:	12/17/13 13:31
Lab Samp ID:	L101-10	Dilution Factor:	1
Lab File ID:	FL17024A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	11	5.0	0.32	0.64
ETHENE	56	5.0	0.30	0.60
METHANE	110E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW11-121213DL	Date Analyzed:	12/17/13 15:45
Lab Samp ID:	L101-10I	Dilution Factor:	20
Lab File ID:	FL17036A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	11J	100	6.4	13
ETHENE	53J	100	6.0	12
METHANE	370	100	3.4	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW21-121113	Date Analyzed:	12/17/13 13:45 # 12/17/13 15:55 ## 12/17/13 16:11
Lab Samp ID:	L101-13 #L101-13I ##L101-13J	Dilution Factor:	1 # 5 ## 400
Lab File ID:	FL17025A #FL17037A ##FL17038A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A #FL17030A ##FL17030A	Instrument ID :	GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	ETHANE	120	25	1.6	3.2
	ETHENE	ND	5.0	0.30	0.60
##	METHANE	11000	2000	68	140

Members of the First Associated File
Members of the Second Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW21-121113	Date Analyzed:	12/17/13 13:45
Lab Samp ID:	L101-13	Dilution Factor:	1
Lab File ID:	FL17025A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	130E	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	100E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW21-121113DL	Date Analyzed:	12/17/13 15:55
Lab Samp ID:	L101-13I	Dilution Factor:	5
Lab File ID:	FL17037A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	120	25	1.6	3.2
ETHENE	ND	25	1.5	3.0
METHANE	920E	25	0.85	1.7

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW21-121113DL	Date Analyzed:	12/17/13 16:11
Lab Samp ID:	L101-13J	Dilution Factor:	400
Lab File ID:	FL17038A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	2000	130	260
ETHENE	ND	2000	120	240
METHANE	11000	2000	68	140

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-BB76-121113	Date Analyzed:	12/17/13 14:09 # 12/17/13 16:29
Lab Samp ID:	L101-15 #L101-15I	Dilution Factor:	1 # 400
Lab File ID:	FL17027A #FL17039A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A #FL17030A	Instrument ID :	GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	4.3J	5.0	0.32	0.64
	ETHENE	ND	5.0	0.30	0.60
#	METHANE	12000	2000	68	140

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-BB76-121113	Date Analyzed:	12/17/13 14:09
Lab Samp ID:	L101-15	Dilution Factor:	1
Lab File ID:	FL17027A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	4.3J	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	110E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	24-BB76-121113DL	Date Analyzed:	12/17/13 16:29
Lab Samp ID:	L101-15I	Dilution Factor:	400
Lab File ID:	FL17039A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	2000	130	260
ETHENE	ND	2000	120	240
METHANE	12000	2000	68	140

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	121113-SB-01	Date Analyzed:	12/17/13 14:21
Lab Samp ID:	L101-16	Dilution Factor:	1
Lab File ID:	FL17028A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	20	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	121113-ER-01	Date Analyzed:	12/17/13 14:30
Lab Samp ID:	L101-17	Dilution Factor:	1
Lab File ID:	FL17029A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17016A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	6.8	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/17/13
Batch No.	: 13L101	Date Extracted:	12/17/13 08:25
Sample ID:	MBLK1W	Date Analyzed:	12/17/13 09:25
Lab Samp ID:	DGL010WB	Dilution Factor:	1
Lab File ID:	FL17003A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	ND	5.0	0.17	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGL010WB	DGL010WL	DGL010WC		
LAB FILE ID:	FL17003A	FL17004A	FL17005A		
DATE EXTRACTED:	12/17/1308:25	12/17/1308:25	12/17/1308:25	DATE COLLECTED:	NA
DATE ANALYZED:	12/17/1309:25	12/17/1309:35	12/17/1309:48	DATE RECEIVED:	12/17/13
PREP. BATCH:	DGL010W	DGL010W	DGL010W		
CALIB. REF:	FL17002A	FL17002A	FL17002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	25.0	99	25.4	24.0	94	4	80-120	30
Ethene	ND	23.7	22.7	96	23.7	21.8	92	4	80-120	30
Methane	ND	13.6	12.9	95	13.6	12.3	91	4	80-120	30

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L101

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
LCS1W	ICL047WL	4.90	1	NA	0.500	0.130	0.250	12/18/1320:20	NA	AL23-42	AL23-37	ICL047W	NA	NA
LCD1W	ICL047WC	4.88	1	NA	0.500	0.130	0.250	12/18/1320:35	NA	AL23-43	AL23-37	ICL047W	NA	NA
MBLK1W	ICL047WB	ND	1	NA	0.500	0.130	0.250	12/18/1320:50	NA	AL23-44	AL23-37	ICL047W	NA	NA
24-TW-41-121213	L101-06I	108	10	NA	5.00	1.30	2.50	12/18/1322:51	NA	AL23-52	AL23-49	ICL047W	12/12/1314:25	12/14/13
121113-SB-01	L101-16	0.243J	1	NA	0.500	0.130	0.250	12/19/1301:38	NA	AL23-63	AL23-61	ICL047W	12/11/1317:20	12/14/13
121113-ER-01	L101-17	0.252J	1	NA	0.500	0.130	0.250	12/19/1301:53	NA	AL23-64	AL23-61	ICL047W	12/11/1317:30	12/14/13
MBLK2W	ICL051WB	ND	1	NA	0.500	0.130	0.250	12/19/1320:14	NA	AL25-39	AL25-37	ICL051W	NA	NA
LCS2W	ICL051WL	4.89	1	NA	0.500	0.130	0.250	12/19/1320:30	NA	AL25-40	AL25-37	ICL051W	NA	NA
LCD2W	ICL051WC	4.89	1	NA	0.500	0.130	0.250	12/19/1320:45	NA	AL25-41	AL25-37	ICL051W	NA	NA
24-EW32-121213	L101-02	4.78	1	NA	0.500	0.130	0.250	12/19/1323:01	NA	AL25-50	AL25-48	ICL051W	12/12/1309:50	12/14/13
24-TW-11-121213	L101-09	0.389J	1	NA	0.500	0.130	0.250	12/19/1323:16	NA	AL25-51	AL25-48	ICL051W	12/12/1316:10	12/14/13
24-IW21-121113	L101-13	3.15	1	NA	0.500	0.130	0.250	12/19/1323:32	NA	AL25-52	AL25-48	ICL051W	12/11/1310:35	12/14/13
24-BB76-121113	L101-15	0.401J	1	NA	0.500	0.130	0.250	12/19/1323:47	NA	AL25-53	AL25-48	ICL051W	12/11/1315:55	12/14/13
24-EW11-121213	L101-10I	399	40	NA	20.0	5.20	10.0	12/20/1300:02	NA	AL25-54	AL25-48	ICL051W	12/12/1317:10	12/14/13
24-EW11-121213DUP	L101-10ID	402	40	NA	20.0	5.20	10.0	12/20/1300:17	NA	AL25-55	AL25-48	ICL051W	12/12/1317:10	12/14/13
24-EW11-121213MS	L101-10IM	609	40	NA	20.0	5.20	10.0	12/20/1300:32	NA	AL25-56	AL25-48	ICL051W	12/12/1317:10	12/14/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICL047WB	ICL047WL	ICL047WC		
LAB FILE ID:	AL23-44	AL23-42	AL23-43		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	12/18/1320:50	12/18/1320:20	12/18/1320:35	DATE RECEIVED:	NA
PREP. BATCH:	ICL047W	ICL047W	ICL047W		
CALIB. REF:	AL23-37	AL23-37	AL23-37		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.9	98	5	4.88	98	1	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICL051WB	ICL051WL	ICL051WC		
LAB FILE ID:	AL25-39	AL25-40	AL25-41		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	12/19/1320:14	12/19/1320:30	12/19/1320:45	DATE RECEIVED:	NA
PREP. BATCH:	ICL051W	ICL051W	ICL051W		
CALIB. REF:	AL25-37	AL25-37	AL25-37		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.89	98	5	4.89	98	0	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: METHOD 300.0

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 40 40
SAMPLE ID: 24-EW11-121213
LAB SAMP ID: L101-10I L101-10IM
LAB FILE ID: AL25-54 AL25-56
DATE EXTRACTED: NA NA DATE COLLECTED: 12/12/13 17:10
DATE ANALYZED: 12/20/1300:02 12/20/1300:32 DATE RECEIVED: 12/14/13
PREP. BATCH: ICL051W ICL051W
CALIB. REF: AL25-48 AL25-48

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Sulfate	399	200	609	105	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L101
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	40	40		
SAMPLE ID:	24-EW11-121213			
EMAX SAMP ID:	L101-10I	L101-10ID		
LAB FILE ID:	AL25-54	AL25-55		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	12/12/13 17:10
DATE ANALYZED:	12/20/1300:02	12/20/1300:17	DATE RECEIVED:	12/14/13
PREP. BATCH:	ICL051W	ICL051W		
CALIB. REF:	AL25-48	AL25-48		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Sulfate	399	402	1	20

METHOD SM2320B
ALKALINITY

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L101
Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALL018WB	ND	1	NA	5	5	5	12/20/1317:03	NA	13E5L1303	13E5L13	ALL018W	NA	NA
LCS1W	ALL018WL	111	1	NA	5	5	5	12/20/1317:10	NA	13E5L1304	13E5L13	ALL018W	NA	NA
LCD1W	ALL018WC	113	1	NA	5	5	5	12/20/1317:17	NA	13E5L1305	13E5L13	ALL018W	NA	NA
24-EW32-121213	L101-02	964	1	NA	5	5	5	12/20/1317:55	NA	13E5L1309	13E5L13	ALL018W	12/12/1309:50	12/14/13
24-TW-41-121213	L101-06	796	1	NA	5	5	5	12/20/1318:06	NA	13E5L1310	13E5L13	ALL018W	12/12/1314:25	12/14/13
24-TW-11-121213	L101-09	1290	1	NA	5	5	5	12/20/1318:25	NA	13E5L1311	13E5L13	ALL018W	12/12/1316:10	12/14/13
24-EW11-121213	L101-10	536	1	NA	5	5	5	12/20/1318:34	NA	13E5L1312	13E5L13	ALL018W	12/12/1317:10	12/14/13
24-IW21-121113	L101-13	1190	1	NA	5	5	5	12/20/1318:50	NA	13E5L1313	13E5L13	ALL018W	12/11/1310:35	12/14/13
24-BB76-121113	L101-15	856	1	NA	5	5	5	12/20/1319:03	NA	13E5L1314	13E5L13	ALL018W	12/11/1315:55	12/14/13
121113-SB-01	L101-16	ND	1	NA	5	5	5	12/20/1319:10	NA	13E5L1315	13E5L13	ALL018W	12/11/1317:20	12/14/13
121113-ER-01	L101-17	ND	1	NA	5	5	5	12/20/1319:17	NA	13E5L1316	13E5L13	ALL018W	12/11/1317:30	12/14/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 21 & 24
BATCH NO. : 13L101
METHOD : SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALL018WB	ALL018WL	ALL018WC
LAB FILE ID :	13E5L1303	13E5L1304	13E5L1305
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	12/20/1317:03	12/20/1317:10	12/20/1317:17
PREP BATCH :	ALL018W	ALL018W	ALL018W
CALIBRATION REF:	13E5L13	13E5L13	13E5L13

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	ND	121	111	92	121	113	93	2	90-110	20

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 16:31
Sample ID:	24-TW-14-121213	Date Analyzed:	12/16/13 16:31
Lab Samp ID:	L102-01	Dilution Factor:	1
Lab File ID:	RLQ339	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	62	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.50J	0.50	0.10	0.20
TRICHLOROETHENE	0.25J	0.50	0.10	0.20
VINYL CHLORIDE	29	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.62	10.00	96.2	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.82	10.00	98.2	85-120
DIBROMOFLUOROMETHANE	10.0	10.00	100	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 17:02
Sample ID:	24-TW-14-121213-D	Date Analyzed:	12/16/13 17:02
Lab Samp ID:	L102-02	Dilution Factor:	1
Lab File ID:	RLQ340	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	60	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.50	0.50	0.10	0.20
TRICHLOROETHENE	0.24J	0.50	0.10	0.20
VINYL CHLORIDE	29	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.74	10.00	97.4	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	9.63	10.00	96.3	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 17:32
Sample ID:	24-BB80-121213	Date Analyzed:	12/16/13 17:32
Lab Samp ID:	L102-03	Dilution Factor:	1
Lab File ID:	RLQ341	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	2.8	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	2.3	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.80	10.00	98.0	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 18:03
Sample ID:	24-BB63-121213	Date Analyzed:	12/16/13 18:03
Lab Samp ID:	L102-04	Dilution Factor:	1
Lab File ID:	RLQ342	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	9.3	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.18J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	10	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.54	10.00	95.4	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 18:34
Sample ID:	24-BB38-121213	Date Analyzed:	12/16/13 18:34
Lab Samp ID:	L102-05	Dilution Factor:	1
Lab File ID:	RLQ343	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	30	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.57	0.50	0.10	0.20
TRICHLOROETHENE	1.7	0.50	0.10	0.20
VINYL CHLORIDE	8.3	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.79	10.00	97.9	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 19:05
Sample ID:	24-BB38-121213-D	Date Analyzed:	12/16/13 19:05
Lab Samp ID:	L102-06	Dilution Factor:	1
Lab File ID:	RLQ344	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	31	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.57	0.50	0.10	0.20
TRICHLOROETHENE	1.7	0.50	0.10	0.20
VINYL CHLORIDE	9.3	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	10.2	10.00	102	75-120
TOLUENE-D8	9.35	10.00	93.5	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 19:37
Sample ID:	24-TW-04-121213	Date Analyzed:	12/16/13 19:37
Lab Samp ID:	L102-07	Dilution Factor:	1
Lab File ID:	RLQ345	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	67	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.18J	0.50	0.10	0.20
TRICHLOROETHENE	0.23J	0.50	0.10	0.20
VINYL CHLORIDE	86	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	10.4	10.00	104	75-120
TOLUENE-D8	9.61	10.00	96.1	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 20:08
Sample ID:	24-TW-16-121213	Date Analyzed:	12/16/13 20:08
Lab Samp ID:	L102-08	Dilution Factor:	1
Lab File ID:	RLQ346	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	71	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.16J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	7.4	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.85	10.00	98.5	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.66	10.00	96.6	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/18/13 12:53
Sample ID:	121213-ER-02	Date Analyzed:	12/18/13 12:53
Lab Samp ID:	L102-09N	Dilution Factor:	1
Lab File ID:	RLQ408	Matrix	: WATER
Ext Btch ID:	VO05L10	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-120
4-BROMOFLUOROBENZENE	11.0	10.00	110	75-120
TOLUENE-D8	9.46	10.00	94.6	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 15:01
Sample ID:	24-EW29-121113	Date Analyzed:	12/16/13 15:01
Lab Samp ID:	L102-10	Dilution Factor:	1
Lab File ID:	RLQ336	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.84	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.20J	0.50	0.10	0.20
TRICHLOROETHENE	0.17J	0.50	0.10	0.20
VINYL CHLORIDE	0.25J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.78	10.00	97.8	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	9.71	10.00	97.1	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 14:30
Sample ID:	24-EW6-121113	Date Analyzed:	12/16/13 14:30
Lab Samp ID:	L102-11	Dilution Factor:	1
Lab File ID:	RLQ335	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.5	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.10J	0.50	0.10	0.20
TRICHLOROETHENE	0.20J	0.50	0.10	0.20
VINYL CHLORIDE	1.8	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.35	10.00	93.5	70-120
4-BROMOFLUOROBENZENE	10.6	10.00	106	75-120
TOLUENE-D8	9.32	10.00	93.2	85-120
DIBROMOFLUOROMETHANE	9.97	10.00	99.7	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 14:01
Sample ID:	24-IW8-121113	Date Analyzed:	12/16/13 14:01
Lab Samp ID:	L102-12	Dilution Factor:	1
Lab File ID:	RLQ334	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.1	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.14J	0.50	0.10	0.20
TRICHLOROETHENE	0.24J	0.50	0.10	0.20
VINYL CHLORIDE	1.2	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.96	10.00	89.6	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	9.56	10.00	95.6	85-120
DIBROMOFLUOROMETHANE	9.95	10.00	99.5	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 20:39
Sample ID:	24-TW-25-121113	Date Analyzed:	12/16/13 20:39
Lab Samp ID:	L102-13	Dilution Factor:	1
Lab File ID:	RLQ347	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.8	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.34J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.72	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	9.27	10.00	92.7	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 21:11
Sample ID:	24-EW31-121113	Date Analyzed:	12/16/13 21:11
Lab Samp ID:	L102-14	Dilution Factor:	1
Lab File ID:	RLQ348	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.64	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.97	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-120
4-BROMOFLUOROBENZENE	10.5	10.00	105	75-120
TOLUENE-D8	9.62	10.00	96.2	85-120
DIBROMOFLUOROMETHANE	10.1	10.00	101	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/16/13 21:42
Sample ID:	24-TW-42-121113	Date Analyzed:	12/16/13 21:42
Lab Samp ID:	L102-15	Dilution Factor:	1
Lab File ID:	RLQ349	Matrix	: WATER
Ext Btch ID:	VO05L08	% Moisture	: NA
Calib. Ref.:	RJQ056	Instrument ID	: T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.24J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	1.0	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.78	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.7	10.00	107	75-120
TOLUENE-D8	9.34	10.00	93.4	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/16/13
Batch No.	: 13L102	Date Extracted:	12/16/13 12:46
Sample ID:	MBLK1W	Date Analyzed:	12/16/13 12:46
Lab Samp ID:	VO05L08B	Dilution Factor:	1
Lab File ID:	RLQ333	Matrix :	WATER
Ext Btch ID:	VO05L08	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.91	10.00	99.1	70-120
4-BROMOFLUOROBENZENE	10.3	10.00	103	75-120
TOLUENE-D8	9.56	10.00	95.6	85-120
DIBROMOFLUOROMETHANE	10.3	10.00	103	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO05L08B	VO05L08L	VO05L08C		
LAB FILE ID:	RLQ333	RLQ330	RLQ331		
DATE EXTRACTED:	12/16/1312:46	12/16/1310:54	12/16/1311:35	DATE COLLECTED:	NA
DATE ANALYZED:	12/16/1312:46	12/16/1310:54	12/16/1311:35	DATE RECEIVED:	12/16/13
PREP. BATCH:	VO05L08	VO05L08	VO05L08		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	10.6	106	10.0	9.79	98	8	70-125	30
Tetrachloroethene	ND	10.0	8.93	89	10.0	8.59	86	4	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.8	108	10.0	10.3	103	5	60-140	30
Trichloroethene	ND	10.0	10.4	104	10.0	9.81	98	6	70-125	30
Vinyl Chloride	ND	10.0	10.9	109	10.0	10.4	104	5	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.72	97	10.0	8.91	89	70-120
4-Bromofluorobenzene	10.0	10.1	101	10.0	10.6	106	75-120
Toluene-d8	10.0	9.76	98	10.0	9.63	96	85-120
Dibromofluoromethane	10.0	10.3	103	10.0	9.64	96	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/18/13
Batch No.	: 13L102	Date Extracted:	12/18/13 12:21
Sample ID:	MBLK2W	Date Analyzed:	12/18/13 12:21
Lab Samp ID:	VO05L10B	Dilution Factor:	1
Lab File ID:	RLQ407	Matrix :	WATER
Ext Btch ID:	VO05L10	% Moisture :	NA
Calib. Ref.:	RJQ056	Instrument ID :	T-O05

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-120
4-BROMOFLUOROBENZENE	10.9	10.00	109	75-120
TOLUENE-D8	9.36	10.00	93.6	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	VO05L10B	VO05L10L	VO05L10C		
LAB FILE ID:	RLQ407	RLQ404	RLQ405		
DATE EXTRACTED:	12/18/1312:21	12/18/1310:47	12/18/1311:19	DATE COLLECTED:	NA
DATE ANALYZED:	12/18/1312:21	12/18/1310:47	12/18/1311:19	DATE RECEIVED:	12/18/13
PREP. BATCH:	VO05L10	VO05L10	VO05L10		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	9.74	97	10.0	9.82	98	1	70-125	30
Tetrachloroethene	ND	10.0	7.80	78	10.0	7.63	76	2	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	10.3	103	10.0	10.1	101	2	60-140	30
Trichloroethene	ND	10.0	9.41	94	10.0	9.51	95	1	70-125	30
Vinyl Chloride	ND	10.0	10.7	107	10.0	10.5	105	2	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.2	102	70-120
4-Bromofluorobenzene	10.0	10.9	109	10.0	11.0	110	75-120
Toluene-d8	10.0	9.32	93	10.0	9.47	95	85-120
Dibromofluoromethane	10.0	10.4	104	10.0	10.4	104	85-115

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-EW29-121113				
LAB SAMP ID:	L102-10	L102-10M	L102-10S		
LAB FILE ID:	RLQ336	RLQ337	RLQ338		
DATE EXTRACTED:	12/16/1315:01	12/16/1315:31	12/16/1316:01	DATE COLLECTED:	12/11/13
DATE ANALYZED:	12/16/1315:01	12/16/1315:31	12/16/1316:01	DATE RECEIVED:	12/14/13
PREP. BATCH:	VO05L08	VO05L08	VO05L08		
CALIB. REF:	RJQ056	RJQ056	RJQ056		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	0.837	10.0	10.9	101	10.0	11.1	103	2	70-125	30
Tetrachloroethene	ND	10.0	8.45	84	10.0	8.61	86	2	45-150	30
Trans-1,2-Dichloroethene	0.202J	10.0	11.1	109	10.0	10.9	107	2	60-140	30
Trichloroethene	0.174J	10.0	10.3	101	10.0	10.1	100	1	70-125	30
Vinyl Chloride	0.247J	10.0	11.7	115	10.0	12.2	120	4	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.53	95	10.0	9.94	99	70-120
4-Bromofluorobenzene	10.0	10.1	101	10.0	10.4	104	75-120
Toluene-d8	10.0	9.65	97	10.0	9.67	97	85-120
Dibromofluoromethane	10.0	9.93	99	10.0	10.1	101	85-115

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L102	Date Extracted: 12/19/13 13:00
Sample ID: 24-TW-14-121213	Date Analyzed: 12/19/13 16:19 # 12/19/13 16:58
Lab Samp ID: L102-01 #L102-01I	Dilution Factor: 1 # 50
Lab File ID: FL19052A #FL19056A	Matrix : WATER
Ext Btch ID: DGL013W	% Moisture : NA
Calib. Ref.: FL19046A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	28	5.0	0.32	0.64
	ETHENE	1.4J	5.0	0.30	0.60
#	METHANE	850	250	8.5	17

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-14-121213	Date Analyzed:	12/19/13 16:19
Lab Samp ID:	L102-01	Dilution Factor:	1
Lab File ID:	FL19052A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	28	5.0	0.32	0.64
ETHENE	1.4J	5.0	0.30	0.60
METHANE	150E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-14-121213DL	Date Analyzed:	12/19/13 16:58
Lab Samp ID:	L102-01I	Dilution Factor:	50
Lab File ID:	FL19056A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	22J	250	16	32
ETHENE	ND	250	15	30
METHANE	850	250	8.5	17

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-14-121213-D	Date Analyzed:	12/19/13 16:29 # 12/19/13 17:07
Lab Samp ID:	L102-02 #L102-02I	Dilution Factor:	1 # 50
Lab File ID:	FL19053A #FL19057A	Matrix	: WATER
Ext Btch ID:	DGL013W	% Moisture	: NA
Calib. Ref.:	FL19046A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	30	5.0	0.32	0.64
	ETHENE	1.4J	5.0	0.30	0.60
#	METHANE	780	250	8.5	17

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-14-121213-D	Date Analyzed:	12/19/13 16:29
Lab Samp ID:	L102-02	Dilution Factor:	1
Lab File ID:	FL19053A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	30	5.0	0.32	0.64
ETHENE	1.4J	5.0	0.30	0.60
METHANE	150E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-14-121213-DDL	Date Analyzed:	12/19/13 17:07
Lab Samp ID:	L102-02I	Dilution Factor:	50
Lab File ID:	FL19057A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	21J	250	16	32
ETHENE	ND	250	15	30
METHANE	780	250	8.5	17

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-04-121213	Date Analyzed:	12/19/13 16:38 # 12/19/13 17:15
Lab Samp ID:	L102-07 #L102-07I	Dilution Factor:	1 # 50
Lab File ID:	FL19054A #FL19058A	Matrix	: WATER
Ext Btch ID:	DGL013W	% Moisture	: NA
Calib. Ref.:	FL19046A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	9.0	5.0	0.32	0.64
	ETHENE	30	5.0	0.30	0.60
#	METHANE	650	250	8.5	17

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-04-121213	Date Analyzed:	12/19/13 16:38
Lab Samp ID:	L102-07	Dilution Factor:	1
Lab File ID:	FL19054A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	9.0	5.0	0.32	0.64
ETHENE	30	5.0	0.30	0.60
METHANE	140E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	24-TW-04-121213DL	Date Analyzed:	12/19/13 17:15
Lab Samp ID:	L102-07I	Dilution Factor:	50
Lab File ID:	FL19058A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	250	16	32
ETHENE	ND	250	15	30
METHANE	650	250	8.5	17

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	121213-ER-02	Date Analyzed:	12/17/13 16:38
Lab Samp ID:	L102-09	Dilution Factor:	1
Lab File ID:	FL17040A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17030A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	0.24J	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW29-121113	Date Analyzed:	12/17/13 17:01 # 12/17/13 17:51
Lab Samp ID:	L102-10 #L102-10I	Dilution Factor:	1 # 1000
Lab File ID:	FL17042A #FL17047A	Matrix	: WATER
Ext Btch ID:	DGL010W	% Moisture	: NA
Calib. Ref.:	FL17041A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	55	5.0	0.32	0.64
	ETHENE	ND	5.0	0.30	0.60
#	METHANE	14000	5000	170	340

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW29-121113	Date Analyzed:	12/17/13 17:01
Lab Samp ID:	L102-10	Dilution Factor:	1
Lab File ID:	FL17042A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	55	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	410E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW29-121113DL	Date Analyzed:	12/17/13 17:51
Lab Samp ID:	L102-10I	Dilution Factor:	1000
Lab File ID:	FL17047A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5000	320	640
ETHENE	ND	5000	300	600
METHANE	14000	5000	170	340

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW6-121113	Date Analyzed:	12/17/13 17:33 # 12/17/13 18:00 ## 12/17/13 18:21
Lab Samp ID:	L102-11 #L102-11I ##L102-11J	Dilution Factor:	1 # 2 ## 1000
Lab File ID:	FL17045A #FL17048A ##FL17050A	Matrix	: WATER
Ext Btch ID:	DGL010W	% Moisture	: NA
Calib. Ref.:	FL17041A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	ETHANE	93	10	0.64	1.3
	ETHENE	ND	5.0	0.30	0.60
##	METHANE	18000	5000	170	340

Members of the First Associated File
Members of the Second Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW6-121113	Date Analyzed:	12/17/13 17:33
Lab Samp ID:	L102-11	Dilution Factor:	1
Lab File ID:	FL17045A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	99E	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	100E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW6-121113DL	Date Analyzed:	12/17/13 18:00
Lab Samp ID:	L102-11I	Dilution Factor:	2
Lab File ID:	FL17048A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	93	10	0.64	1.3
ETHENE	ND	10	0.60	1.2
METHANE	210E	10	0.34	0.68

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-EW6-121113DL	Date Analyzed:	12/17/13 18:21
Lab Samp ID:	L102-11J	Dilution Factor:	1000
Lab File ID:	FL17050A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5000	320	640
ETHENE	ND	5000	300	600
METHANE	18000	5000	170	340

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/11/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L102	Date Extracted: 12/17/13 08:25
Sample ID: 24-IW8-121113	Date Analyzed: 12/17/13 17:42 # 12/17/13 18:12
Lab Samp ID: L102-12 #L102-12I	Dilution Factor: 1 # 1000
Lab File ID: FL17046A #FL17049A	Matrix : WATER
Ext Btch ID: DGL010W	% Moisture : NA
Calib. Ref.: FL17041A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	47	5.0	0.32	0.64
	ETHENE	ND	5.0	0.30	0.60
#	METHANE	15000	5000	170	340

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW8-121113	Date Analyzed:	12/17/13 17:42
Lab Samp ID:	L102-12	Dilution Factor:	1
Lab File ID:	FL17046A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	47	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	110E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	24-IW8-121113DL	Date Analyzed:	12/17/13 18:12
Lab Samp ID:	L102-12I	Dilution Factor:	1000
Lab File ID:	FL17049A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17041A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5000	320	640
ETHENE	ND	5000	300	600
METHANE	15000	5000	170	340

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/17/13
Batch No.	: 13L102	Date Extracted:	12/17/13 08:25
Sample ID:	MBLK1W	Date Analyzed:	12/17/13 09:25
Lab Samp ID:	DGL010WB	Dilution Factor:	1
Lab File ID:	FL17003A	Matrix :	WATER
Ext Btch ID:	DGL010W	% Moisture :	NA
Calib. Ref.:	FL17002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	ND	5.0	0.17	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGL010WB	DGL010WL	DGL010WC		
LAB FILE ID:	FL17003A	FL17004A	FL17005A		
DATE EXTRACTED:	12/17/1308:25	12/17/1308:25	12/17/1308:25	DATE COLLECTED:	NA
DATE ANALYZED:	12/17/1309:25	12/17/1309:35	12/17/1309:48	DATE RECEIVED:	12/17/13
PREP. BATCH:	DGL010W	DGL010W	DGL010W		
CALIB. REF:	FL17002A	FL17002A	FL17002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	25.0	99	25.4	24.0	94	4	80-120	30
Ethene	ND	23.7	22.7	96	23.7	21.8	92	4	80-120	30
Methane	ND	13.6	12.9	95	13.6	12.3	91	4	80-120	30

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/19/13
Batch No.	: 13L102	Date Extracted:	12/19/13 13:00
Sample ID:	MBLK2W	Date Analyzed:	12/19/13 15:23
Lab Samp ID:	DGL013WB	Dilution Factor:	1
Lab File ID:	FL19047A	Matrix :	WATER
Ext Btch ID:	DGL013W	% Moisture :	NA
Calib. Ref.:	FL19046A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	ND	5.0	0.17	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	DGL013WB	DGL013WL	DGL013WC		
LAB FILE ID:	FL19047A	FL19048A	FL19049A		
DATE EXTRACTED:	12/19/1313:00	12/19/1313:00	12/19/1313:00	DATE COLLECTED:	NA
DATE ANALYZED:	12/19/1315:23	12/19/1315:33	12/19/1315:48	DATE RECEIVED:	12/19/13
PREP. BATCH:	DGL013W	DGL013W	DGL013W		
CALIB. REF:	FL19046A	FL19046A	FL19046A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	24.9	98	25.4	24.4	96	2	80-120	30
Ethene	ND	23.7	23.4	99	23.7	23.3	98	0	80-120	30
Methane	ND	13.6	13.2	97	13.6	13.1	96	1	80-120	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	24-EW29-121113				
LAB SAMP ID:	L102-10	L102-10M	L102-10S		
LAB FILE ID:	FL17042A	FL17043A	FL17044A		
DATE EXTRACTED:	12/17/1308:25	12/17/1308:25	12/17/1308:25	DATE COLLECTED:	12/11/13
DATE ANALYZED:	12/17/1317:01	12/17/1317:13	12/17/1317:24	DATE RECEIVED:	12/14/13
PREP. BATCH:	DGL010W	DGL010W	DGL010W		
CALIB. REF:	FL17041A	FL17041A	FL17041A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	55.2	25.4	72.8E	70*	25.4	72.8E	69*	0	80-120	30
Ethene	ND	23.7	17.4	73*	23.7	17.5	74*	0	80-120	30
Methane	414E	13.6	397E	-124*	13.6	399E	-114*	0	80-120	30

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L102

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
LCS1W	ICL047WL	4.90	1	NA	0.500	0.130	0.250	12/18/1320:20	NA	AL23-42	AL23-37	ICL047W	NA	NA
LCD1W	ICL047WC	4.88	1	NA	0.500	0.130	0.250	12/18/1320:35	NA	AL23-43	AL23-37	ICL047W	NA	NA
MBLK1W	ICL047WB	ND	1	NA	0.500	0.130	0.250	12/18/1320:50	NA	AL23-44	AL23-37	ICL047W	NA	NA
24-EW29-121113	L102-10	2.76	1	NA	0.500	0.130	0.250	12/19/1302:09	NA	AL23-65	AL23-61	ICL047W	12/11/1309:35	12/14/13
24-EW29-121113DUP	L102-10D	2.73	1	NA	0.500	0.130	0.250	12/19/1302:24	NA	AL23-66	AL23-61	ICL047W	12/11/1309:35	12/14/13
24-EW29-121113MS	L102-10M	8.01	1	NA	0.500	0.130	0.250	12/19/1302:39	NA	AL23-67	AL23-61	ICL047W	12/11/1309:35	12/14/13
24-EW6-121113	L102-11	5.43	1	NA	0.500	0.130	0.250	12/19/1302:54	NA	AL23-68	AL23-61	ICL047W	12/11/1311:30	12/14/13
24-IW8-121113	L102-12	6.82	1	NA	0.500	0.130	0.250	12/19/1303:09	NA	AL23-69	AL23-61	ICL047W	12/11/1312:35	12/14/13
24-TW-14-121213	L102-01I	199	20	NA	10.0	2.60	5.00	12/19/1303:24	NA	AL23-70	AL23-61	ICL047W	12/12/1312:15	12/14/13
24-TW-14-121213-D	L102-02I	198	20	NA	10.0	2.60	5.00	12/19/1303:40	NA	AL23-71	AL23-61	ICL047W	12/12/1312:20	12/14/13
24-TW-04-121213	L102-07I	75.9	10	NA	5.00	1.30	2.50	12/19/1303:55	NA	AL23-72	AL23-61	ICL047W	12/12/1316:15	12/14/13
121213-ER-02	L102-09	0.250J	1	NA	0.500	0.130	0.250	12/19/1304:40	NA	AL23-75	AL23-73	ICL047W	12/12/1317:50	12/14/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICL047WB	ICL047WL	ICL047WC		
LAB FILE ID:	AL23-44	AL23-42	AL23-43		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	12/18/1320:50	12/18/1320:20	12/18/1320:35	DATE RECEIVED:	NA
PREP. BATCH:	ICL047W	ICL047W	ICL047W		
CALIB. REF:	AL23-37	AL23-37	AL23-37		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.9	98	5	4.88	98	1	90-110	20

EMAX QUALITY CONTROL DATA
MS ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: METHOD 300.0

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MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: 24-EW29-121113
LAB SAMP ID: L102-10 L102-10M
LAB FILE ID: AL23-65 AL23-67
DATE EXTRACTED: NA NA DATE COLLECTED: 12/11/13 09:35
DATE ANALYZED: 12/19/1302:09 12/19/1302:39 DATE RECEIVED: 12/14/13
PREP. BATCH: ICL047W ICL047W
CALIB. REF: AL23-61 AL23-61

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	QC LIMIT (%)
Sulfate	2.76	5	8.01	105	80-120

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L102
METHOD: METHOD 300.0

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	24-EW29-121113			
EMAX SAMP ID:	L102-10	L102-10D		
LAB FILE ID:	AL23-65	AL23-66		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	12/11/13 09:35
DATE ANALYZED:	12/19/1302:09	12/19/1302:24	DATE RECEIVED:	12/14/13
PREP. BATCH:	ICL047W	ICL047W		
CALIB. REF:	AL23-61	AL23-61		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Sulfate	2.76	2.73	1	20

METHOD SM2320B
ALKALINITY

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L102

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALL013WB	ND	1	NA	5	5	5	12/19/1304:48	NA	13E5L0955	13E5L09	ALL013W	NA	NA
LCS1W	ALL013WL	65.0	1	NA	5	5	5	12/19/1304:55	NA	13E5L0956	13E5L09	ALL013W	NA	NA
LCD1W	ALL013WC	66.0	1	NA	5	5	5	12/19/1305:01	NA	13E5L0957	13E5L09	ALL013W	NA	NA
24-TW-14-121213	L102-01	522	1	NA	5	5	5	12/19/1306:37	NA	13E5L0968	13E5L09	ALL013W	12/12/1312:15	12/14/13
24-TW-14-121213-D	L102-02	518	1	NA	5	5	5	12/19/1306:47	NA	13E5L0969	13E5L09	ALL013W	12/12/1312:20	12/14/13
24-TW-04-121213	L102-07	397	1	NA	5	5	5	12/19/1306:57	NA	13E5L0970	13E5L09	ALL013W	12/12/1316:15	12/14/13
121213-ER-02	L102-09	ND	1	NA	5	5	5	12/19/1307:05	NA	13E5L0971	13E5L09	ALL013W	12/12/1317:50	12/14/13
24-EW29-121113	L102-10	1290	1	NA	5	5	5	12/19/1307:22	NA	13E5L0972	13E5L09	ALL013W	12/11/1309:35	12/14/13
24-EW29-121113DUP	L102-10D	1280	1	NA	5	5	5	12/19/1307:39	NA	13E5L0973	13E5L09	ALL013W	12/11/1309:35	12/14/13
24-EW6-121113	L102-11	1250	1	NA	5	5	5	12/19/1307:57	NA	13E5L0974	13E5L09	ALL013W	12/11/1311:30	12/14/13
24-IW8-121113	L102-12	1110	1	NA	5	5	5	12/19/1308:12	NA	13E5L0975	13E5L09	ALL013W	12/11/1312:35	12/14/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 21 & 24
BATCH NO. : 13L102
METHOD : SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALL013WB	ALL013WL	ALL013WC
LAB FILE ID :	13E5L0955	13E5L0956	13E5L0957
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	12/19/1304:48	12/19/1304:55	12/19/1305:01
PREP BATCH :	ALL013W	ALL013W	ALL013W
CALIBRATION REF:	13E5L09	13E5L09	13E5L09

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	ND	71.5	65.0	91	71.5	66.0	92	2	90-110	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 21 & 24
BATCH NO. : 13L102
METHOD : SM2320B

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MATRIX : WATER % MOISTURE:

DILUTION FACTOR:	1	1
SAMPLE ID :	24-EW29-121113	24-EW29-121113DUP
LAB SAMPLE ID :	L102-10	L102-10D
LAB FILE ID :	13E5L0972	13E5L0973
DATE PREPARED :	NA	NA
DATE ANALYZED :	12/19/1307:22	12/19/1307:39
PREP BATCH :	ALL013W	ALL013W
CALIBRATION REF:	13E5L09	13E5L09

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Alkalinity	1290	1280	1	20

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 19:12
Sample ID:	24-TW-37-121113	Date Analyzed:	12/17/13 19:12
Lab Samp ID:	L103-01	Dilution Factor:	1
Lab File ID:	RLG315	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	2.0	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.91	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	10.0	10.00	100	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 19:36
Sample ID:	24-EW4-121113	Date Analyzed:	12/17/13 19:36
Lab Samp ID:	L103-02	Dilution Factor:	1
Lab File ID:	RLG316	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	2.8	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	1.4	0.50	0.10	0.20
TRICHLOROETHENE	0.33J	0.50	0.10	0.20
VINYL CHLORIDE	1.6	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	9.87	10.00	98.7	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 20:01
Sample ID:	24-TW-50-121113	Date Analyzed:	12/17/13 20:01
Lab Samp ID:	L103-03	Dilution Factor:	1
Lab File ID:	RLG317	Matrix :	WATER
Ext Btch ID:	VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073	Instrument ID :	T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.46J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	0.10J	0.50	0.10	0.20
VINYL CHLORIDE	0.27J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	9.74	10.00	97.4	75-120
TOLUENE-D8	9.98	10.00	99.8	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 20:25
Sample ID:	24-TW-26-121113	Date Analyzed:	12/17/13 20:25
Lab Samp ID:	L103-04	Dilution Factor:	1
Lab File ID:	RLG318	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.67	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.86	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	9.88	10.00	98.8	75-120
TOLUENE-D8	9.95	10.00	99.5	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 20:49
Sample ID:	24-TW-43-121113	Date Analyzed:	12/17/13 20:49
Lab Samp ID:	L103-05	Dilution Factor:	1
Lab File ID:	RLG319	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.24J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.27J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.60	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-120
4-BROMOFLUOROBENZENE	9.83	10.00	98.3	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.4	10.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/11/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 21:13
Sample ID:	24-TW-36-121113	Date Analyzed:	12/17/13 21:13
Lab Samp ID:	L103-06	Dilution Factor:	1
Lab File ID:	RLG320	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.34J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.38J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.43J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 21:37
Sample ID:	24-EW28-121213	Date Analyzed:	12/17/13 21:37
Lab Samp ID:	L103-07	Dilution Factor:	1
Lab File ID:	RLG321	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.38J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.18J	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.23J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	9.68	10.00	96.8	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 22:02
Sample ID:	24-TW-28-121213	Date Analyzed:	12/17/13 22:02
Lab Samp ID:	L103-08	Dilution Factor:	1
Lab File ID:	RLG322	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1.3	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.86	0.50	0.10	0.20
TRICHLOROETHENE	0.17J	0.50	0.10	0.20
VINYL CHLORIDE	1.7	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	10.1	10.00	101	75-120
TOLUENE-D8	10.0	10.00	100	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 22:27
Sample ID:	24-TW-49-121213	Date Analyzed:	12/17/13 22:27
Lab Samp ID:	L103-09	Dilution Factor:	1
Lab File ID:	RLG323	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	2.8	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	0.22J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.83	10.00	98.3	75-120
TOLUENE-D8	9.89	10.00	98.9	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 22:51
Sample ID:	24-EW12-121213	Date Analyzed:	12/17/13 22:51
Lab Samp ID:	L103-10	Dilution Factor:	1
Lab File ID:	RLG324	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	0.28J	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.16J	0.50	0.10	0.20
TRICHLOROETHENE	0.12J	0.50	0.10	0.20
VINYL CHLORIDE	0.28J	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-120
4-BROMOFLUOROBENZENE	9.72	10.00	97.2	75-120
TOLUENE-D8	10.2	10.00	102	85-120
DIBROMOFLUOROMETHANE	10.6	10.00	106	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/18/13 00:03 # 12/17/13 18:00
Sample ID:	24-TW-48-121213	Date Analyzed:	12/18/13 00:03 # 12/17/13 18:00
Lab Samp ID:	L103-11 #L103-11I	Dilution Factor:	1 # 50
Lab File ID:	RLG327 #RLG312	Matrix :	WATER
Ext Btch ID:	VOE2L09 #VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073 #RFG073	Instrument ID :	T-OE2

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	CIS-1,2-DICHLOROETHENE	1100	25	5.0	10
	TETRACHLOROETHENE	2.3	0.50	0.15	0.20
	TRANS-1,2-DICHLOROETHENE	7.0	0.50	0.10	0.20
	TRICHLOROETHENE	1.3	0.50	0.10	0.20
#	VINYL CHLORIDE	500	25	6.0	10

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
	4-BROMOFLUOROBENZENE	9.74	10.00	97.4	75-120
	TOLUENE-D8	10.1	10.00	101	85-120
	DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115
#	1,2-DICHLOROETHANE-D4	539	500.0	108	70-120
#	4-BROMOFLUOROBENZENE	485	500.0	96.9	75-120
#	TOLUENE-D8	499	500.0	99.7	85-120
#	DIBROMOFLUOROMETHANE	510	500.0	102	85-115

Members of the Associated File

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/18/13 00:03
Sample ID:	24-TW-48-121213	Date Analyzed:	12/18/13 00:03
Lab Samp ID:	L103-11	Dilution Factor:	1
Lab File ID:	RLG327	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	820E	0.50	0.10	0.20
TETRACHLOROETHENE	2.3	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	7.0	0.50	0.10	0.20
TRICHLOROETHENE	1.3	0.50	0.10	0.20
VINYL CHLORIDE	460E	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.74	10.00	97.4	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 18:00
Sample ID:	24-TW-48-121213DL	Date Analyzed:	12/17/13 18:00
Lab Samp ID:	L103-11I	Dilution Factor:	50
Lab File ID:	RLG312	Matrix :	WATER
Ext Btch ID:	VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073	Instrument ID :	T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	1100	25	5.0	10
TETRACHLOROETHENE	ND	25	7.5	10
TRANS-1,2-DICHLOROETHENE	6.8J	25	5.0	10
TRICHLOROETHENE	ND	25	5.0	10
VINYL CHLORIDE	500	25	6.0	10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	539	500.0	108	70-120
4-BROMOFLUOROBENZENE	485	500.0	96.9	75-120
TOLUENE-D8	499	500.0	99.7	85-120
DIBROMOFLUOROMETHANE	510	500.0	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L103	Date Extracted: 12/17/13 23:15 # 12/17/13 18:23
Sample ID: 24-TW-47-121213	Date Analyzed: 12/17/13 23:15 # 12/17/13 18:23
Lab Samp ID: L103-12 #L103-12I	Dilution Factor: 1 # 5
Lab File ID: RLG325 #RLG313	Matrix : WATER
Ext Btch ID: VOE2L09 #VOE2L09	% Moisture : NA
Calib. Ref.: RFG073 #RFG073	Instrument ID : T-OE2

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	CIS-1,2-DICHLOROETHENE	24	0.50	0.10	0.20
	TETRACHLOROETHENE	ND	0.50	0.15	0.20
	TRANS-1,2-DICHLOROETHENE	0.33J	0.50	0.10	0.20
	TRICHLOROETHENE	0.20J	0.50	0.10	0.20
#	VINYL CHLORIDE	33	2.5	0.60	1.0

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
	4-BROMOFLUOROBENZENE	9.85	10.00	98.4	75-120
	TOLUENE-D8	10.1	10.00	101	85-120
	DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115
#	1,2-DICHLOROETHANE-D4	54.7	50.00	109	70-120
#	4-BROMOFLUOROBENZENE	48.7	50.00	97.4	75-120
#	TOLUENE-D8	50.0	50.00	100	85-120
#	DIBROMOFLUOROMETHANE	52.1	50.00	104	85-115

Members of the Associated File

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 23:15
Sample ID:	24-TW-47-121213	Date Analyzed:	12/17/13 23:15
Lab Samp ID:	L103-12	Dilution Factor:	1
Lab File ID:	RLG325	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	24	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	0.33J	0.50	0.10	0.20
TRICHLOROETHENE	0.20J	0.50	0.10	0.20
VINYL CHLORIDE	32E	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	9.85	10.00	98.4	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 18:23
Sample ID:	24-TW-47-121213DL	Date Analyzed:	12/17/13 18:23
Lab Samp ID:	L103-12I	Dilution Factor:	5
Lab File ID:	RLG313	Matrix :	WATER
Ext Btch ID:	VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073	Instrument ID :	T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	24	2.5	0.50	1.0
TETRACHLOROETHENE	ND	2.5	0.75	1.0
TRANS-1,2-DICHLOROETHENE	ND	2.5	0.50	1.0
TRICHLOROETHENE	ND	2.5	0.50	1.0
VINYL CHLORIDE	33	2.5	0.60	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	54.7	50.00	109	70-120
4-BROMOFLUOROBENZENE	48.7	50.00	97.4	75-120
TOLUENE-D8	50.0	50.00	100	85-120
DIBROMOFLUOROMETHANE	52.1	50.00	104	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 23:39 # 12/17/13 18:48
Sample ID:	24-EW11-121213-D	Date Analyzed:	12/17/13 23:39 # 12/17/13 18:48
Lab Samp ID:	L103-13 #L103-13I	Dilution Factor:	1 # 5
Lab File ID:	RLG326 #RLG314	Matrix :	WATER
Ext Btch ID:	VOE2L09 #VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073 #RFG073	Instrument ID :	T-OE2

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	CIS-1,2-DICHLOROETHENE	120	0.50	0.10	0.20
	TETRACHLOROETHENE	ND	0.50	0.15	0.20
	TRANS-1,2-DICHLOROETHENE	7.9	0.50	0.10	0.20
	TRICHLOROETHENE	0.12J	0.50	0.10	0.20
#	VINYL CHLORIDE	62	2.5	0.60	1.0

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
	4-BROMOFLUOROBENZENE	9.90	10.00	99.0	75-120
	TOLUENE-D8	10.1	10.00	101	85-120
	DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115
#	1,2-DICHLOROETHANE-D4	53.7	50.00	107	70-120
#	4-BROMOFLUOROBENZENE	49.2	50.00	98.3	75-120
#	TOLUENE-D8	49.6	50.00	99.2	85-120
#	DIBROMOFLUOROMETHANE	51.3	50.00	103	85-115

Members of the Associated File

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 23:39
Sample ID:	24-EW11-121213-D	Date Analyzed:	12/17/13 23:39
Lab Samp ID:	L103-13	Dilution Factor:	1
Lab File ID:	RLG326	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	120	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	7.9	0.50	0.10	0.20
TRICHLOROETHENE	0.12J	0.50	0.10	0.20
VINYL CHLORIDE	64E	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-120
4-BROMOFLUOROBENZENE	9.90	10.00	99.0	75-120
TOLUENE-D8	10.1	10.00	101	85-120
DIBROMOFLUOROMETHANE	10.5	10.00	105	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 18:48
Sample ID:	24-EW11-121213-DDL	Date Analyzed:	12/17/13 18:48
Lab Samp ID:	L103-13I	Dilution Factor:	5
Lab File ID:	RLG314	Matrix :	WATER
Ext Btch ID:	VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073	Instrument ID :	T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	120	2.5	0.50	1.0
TETRACHLOROETHENE	ND	2.5	0.75	1.0
TRANS-1,2-DICHLOROETHENE	6.7	2.5	0.50	1.0
TRICHLOROETHENE	ND	2.5	0.50	1.0
VINYL CHLORIDE	62	2.5	0.60	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	53.7	50.00	107	70-120
4-BROMOFLUOROBENZENE	49.2	50.00	98.3	75-120
TOLUENE-D8	49.6	50.00	99.2	85-120
DIBROMOFLUOROMETHANE	51.3	50.00	103	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	12/13/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/17/13 17:35
Sample ID:	121313-TB-01	Date Analyzed:	12/17/13 17:35
Lab Samp ID:	L103-14	Dilution Factor:	1
Lab File ID:	RLG311	Matrix	: WATER
Ext Btch ID:	VOE2L09	% Moisture	: NA
Calib. Ref.:	RFG073	Instrument ID	: T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-120
4-BROMOFLUOROBENZENE	9.76	10.00	97.6	75-120
TOLUENE-D8	9.94	10.00	99.4	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

METHOD SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/17/13
Batch No.	: 13L103	Date Extracted:	12/17/13 17:12
Sample ID:	MBLK1W	Date Analyzed:	12/17/13 17:12
Lab Samp ID:	VOE2L09B	Dilution Factor:	1
Lab File ID:	RLG310	Matrix :	WATER
Ext Btch ID:	VOE2L09	% Moisture :	NA
Calib. Ref.:	RFG073	Instrument ID :	T-OE2

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
CIS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TETRACHLOROETHENE	ND	0.50	0.15	0.20
TRANS-1,2-DICHLOROETHENE	ND	0.50	0.10	0.20
TRICHLOROETHENE	ND	0.50	0.10	0.20
VINYL CHLORIDE	ND	0.50	0.12	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-120
4-BROMOFLUOROBENZENE	9.77	10.00	97.7	75-120
TOLUENE-D8	9.87	10.00	98.7	85-120
DIBROMOFLUOROMETHANE	10.2	10.00	102	85-115

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L103
METHOD: SW5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VOE2L09B	VOE2L09L	VOE2L09C		
LAB FILE ID:	RLG310	RLG308	RLG309		
DATE EXTRACTED:	12/17/1317:12	12/17/1316:23	12/17/1316:47	DATE COLLECTED:	NA
DATE ANALYZED:	12/17/1317:12	12/17/1316:23	12/17/1316:47	DATE RECEIVED:	12/17/13
PREP. BATCH:	VOE2L09	VOE2L09	VOE2L09		
CALIB. REF:	RFG073	RFG073	RFG073		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
cis-1,2-Dichloroethene	ND	10.0	8.60	86	10.0	8.77	88	2	70-125	30
Tetrachloroethene	ND	10.0	8.82	88	10.0	8.87	89	1	45-150	30
Trans-1,2-Dichloroethene	ND	10.0	8.32	83	10.0	8.61	86	3	60-140	30
Trichloroethene	ND	10.0	8.51	85	10.0	8.83	88	4	70-125	30
Vinyl Chloride	ND	10.0	7.74	77	10.0	9.30	93	18	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.6	106	70-120
4-Bromofluorobenzene	10.0	9.44	94	10.0	9.42	94	75-120
Toluene-d8	10.0	9.56	96	10.0	9.67	97	85-120
Dibromofluoromethane	10.0	10.0	100	10.0	10.1	101	85-115

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-28-121213	Date Analyzed:	12/20/13 11:24 # 12/20/13 12:18
Lab Samp ID:	L103-08 #L103-08I	Dilution Factor:	1 # 200
Lab File ID:	FL20019A #FL20024A	Matrix	: WATER
Ext Btch ID:	DGL014W	% Moisture	: NA
Calib. Ref.:	FL20018A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	6.1	5.0	0.32	0.64
	ETHENE	1.0J	5.0	0.30	0.60
#	METHANE	3100	1000	34	68

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-28-121213	Date Analyzed:	12/20/13 11:24
Lab Samp ID:	L103-08	Dilution Factor:	1
Lab File ID:	FL20019A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	6.1	5.0	0.32	0.64
ETHENE	1.0J	5.0	0.30	0.60
METHANE	220E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-28-121213DL	Date Analyzed:	12/20/13 12:18
Lab Samp ID:	L103-08I	Dilution Factor:	200
Lab File ID:	FL20024A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	1000	64	130
ETHENE	ND	1000	60	120
METHANE	3100	1000	34	68

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L103	Date Extracted: 12/20/13 07:30
Sample ID: 24-EW12-121213	Date Analyzed: 12/20/13 11:34 # 12/20/13 12:26 ## 12/20/13 12:39
Lab Samp ID: L103-10 #L103-10I ##L103-10J	Dilution Factor: 1 # 2 ## 400
Lab File ID: FL20020A #FL20025A ##FL20026A	Matrix : WATER
Ext Btch ID: DGL014W	% Moisture : NA
Calib. Ref.: FL20018A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
#	ETHANE	77	10	0.64	1.3
	ETHENE	ND	5.0	0.30	0.60
##	METHANE	13000	2000	68	140

Members of the First Associated File
Members of the Second Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-EW12-121213	Date Analyzed:	12/20/13 11:34
Lab Samp ID:	L103-10	Dilution Factor:	1
Lab File ID:	FL20020A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	82E	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	100E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-EW12-121213DL	Date Analyzed:	12/20/13 12:26
Lab Samp ID:	L103-10I	Dilution Factor:	2
Lab File ID:	FL20025A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	77	10	0.64	1.3
ETHENE	ND	10	0.60	1.2
METHANE	450E	10	0.34	0.68

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-EW12-121213DL	Date Analyzed:	12/20/13 12:39
Lab Samp ID:	L103-10J	Dilution Factor:	400
Lab File ID:	FL20026A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	150J	2000	130	260
ETHENE	ND	2000	120	240
METHANE	13000	2000	68	140

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-48-121213DL	Date Analyzed:	12/20/13 12:49 # 12/20/13 12:58
Lab Samp ID:	L103-11I #L103-11J	Dilution Factor:	20 # 800
Lab File ID:	FL20027A #FL20028A	Matrix	: WATER
Ext Btch ID:	DGL014W	% Moisture	: NA
Calib. Ref.:	FL20018A	Instrument ID	: GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	180	100	6.4	13
	ETHENE	760	100	6.0	12
#	METHANE	10000	4000	140	270

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-48-121213	Date Analyzed:	12/20/13 12:49
Lab Samp ID:	L103-11I	Dilution Factor:	20
Lab File ID:	FL20027A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	180	100	6.4	13
ETHENE	760	100	6.0	12
METHANE	2200E	100	3.4	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-48-121213DL	Date Analyzed:	12/20/13 12:58
Lab Samp ID:	L103-11J	Dilution Factor:	800
Lab File ID:	FL20028A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	4000	260	510
ETHENE	680J	4000	240	480
METHANE	10000	4000	140	270

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L103	Date Extracted: 12/20/13 07:30
Sample ID: 24-TW-47-121213	Date Analyzed: 12/20/13 11:55 # 12/20/13 13:22
Lab Samp ID: L103-12 #L103-12I	Dilution Factor: 1 # 800
Lab File ID: FL20022A #FL20029A	Matrix : WATER
Ext Btch ID: DGL014W	% Moisture : NA
Calib. Ref.: FL20018A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	38	5.0	0.32	0.64
	ETHENE	12	5.0	0.30	0.60
#	METHANE	9100	4000	140	270

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-47-121213	Date Analyzed:	12/20/13 11:55
Lab Samp ID:	L103-12	Dilution Factor:	1
Lab File ID:	FL20022A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	38	5.0	0.32	0.64
ETHENE	12	5.0	0.30	0.60
METHANE	95E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-TW-47-121213DL	Date Analyzed:	12/20/13 13:22
Lab Samp ID:	L103-12I	Dilution Factor:	800
Lab File ID:	FL20029A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	4000	260	510
ETHENE	ND	4000	240	480
METHANE	9100	4000	140	270

METHOD RSK-175
DISSOLVED GASES

Client : TREVET	Date Collected: 12/12/13
Project : TREASURE ISLAND IR SITES 21 & 24	Date Received: 12/14/13
Batch No. : 13L103	Date Extracted: 12/20/13 07:30
Sample ID: 24-EW11-121213-D	Date Analyzed: 12/20/13 12:06 # 12/20/13 13:33
Lab Samp ID: L103-13 #L103-13I	Dilution Factor: 1 # 20
Lab File ID: FL20023A #FL20030A	Matrix : WATER
Ext Btch ID: DGL014W	% Moisture : NA
Calib. Ref.: FL20018A	Instrument ID : GCT010

	PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
	ETHANE	10	5.0	0.32	0.64
	ETHENE	50	5.0	0.30	0.60
#	METHANE	280	100	3.4	6.8

Members of the Associated File

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-EW11-121213-D	Date Analyzed:	12/20/13 12:06
Lab Samp ID:	L103-13	Dilution Factor:	1
Lab File ID:	FL20023A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	10	5.0	0.32	0.64
ETHENE	50	5.0	0.30	0.60
METHANE	110E	5.0	0.17	0.34

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	12/12/13
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/14/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	24-EW11-121213-DDL	Date Analyzed:	12/20/13 13:33
Lab Samp ID:	L103-13I	Dilution Factor:	20
Lab File ID:	FL20030A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20018A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	7.2J	100	6.4	13
ETHENE	39J	100	6.0	12
METHANE	280	100	3.4	6.8

METHOD RSK-175
DISSOLVED GASES

Client	: TREVET	Date Collected:	NA
Project	: TREASURE ISLAND IR SITES 21 & 24	Date Received:	12/20/13
Batch No.	: 13L103	Date Extracted:	12/20/13 07:30
Sample ID:	MBLK1W	Date Analyzed:	12/20/13 08:26
Lab Samp ID:	DGL014WB	Dilution Factor:	1
Lab File ID:	FL20003A	Matrix :	WATER
Ext Btch ID:	DGL014W	% Moisture :	NA
Calib. Ref.:	FL20002A	Instrument ID :	GCT010

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ETHANE	ND	5.0	0.32	0.64
ETHENE	ND	5.0	0.30	0.60
METHANE	ND	5.0	0.17	0.34

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L103
METHOD: RSK-175

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGL014WB	DGL014WL	DGL014WC		
LAB FILE ID:	FL20003A	FL20004A	FL20005A		
DATE EXTRACTED:	12/20/1307:30	12/20/1307:30	12/20/1307:30	DATE COLLECTED:	NA
DATE ANALYZED:	12/20/1308:26	12/20/1308:39	12/20/1308:50	DATE RECEIVED:	12/20/13
PREP. BATCH:	DGL014W	DGL014W	DGL014W		
CALIB. REF:	FL20002A	FL20002A	FL20002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.4	24.6	97	25.4	24.3	96	1	80-120	30
Ethene	ND	23.7	22.5	95	23.7	22.2	94	2	80-120	30
Methane	ND	13.6	13.1	97	13.6	13.0	95	1	80-120	30

METHOD 300.0
SULFATE

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L103

Matrix : WATER
Instrument ID : D0

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Coll DATETIME	Rec DATE
MBLK1W	ICL051WB	ND	1	NA	0.500	0.130	0.250	12/19/1320:14	NA	AL25-39	AL25-37	ICL051W	NA	NA
LCS1W	ICL051WL	4.89	1	NA	0.500	0.130	0.250	12/19/1320:30	NA	AL25-40	AL25-37	ICL051W	NA	NA
LCD1W	ICL051WC	4.89	1	NA	0.500	0.130	0.250	12/19/1320:45	NA	AL25-41	AL25-37	ICL051W	NA	NA
24-TW-28-121213	L103-08I	39.5	10	NA	5.00	1.30	2.50	12/20/1302:49	NA	AL25-65	AL25-60	ICL051W	12/12/1310:15	12/14/13
24-EW12-121213	L103-10I	43.0	10	NA	5.00	1.30	2.50	12/20/1303:04	NA	AL25-66	AL25-60	ICL051W	12/12/1313:55	12/14/13
24-TW-48-121213	L103-11I	131	10	NA	5.00	1.30	2.50	12/20/1303:19	NA	AL25-67	AL25-60	ICL051W	12/12/1315:15	12/14/13
LCS2W	ICL059WL	4.81	1	NA	0.500	0.130	0.250	12/21/1300:53	NA	AL27-59	AL27-50	ICL059W	NA	NA
LCD2W	ICL059WC	4.81	1	NA	0.500	0.130	0.250	12/21/1301:08	NA	AL27-60	AL27-50	ICL059W	NA	NA
MBLK2W	ICL059WB	ND	1	NA	0.500	0.130	0.250	12/21/1301:23	NA	AL27-61	AL27-50	ICL059W	NA	NA
24-TW-47-121213	L103-12I	251	20	NA	10.0	2.60	5.00	12/21/1302:09	NA	AL27-64	AL27-62	ICL059W	12/12/1316:20	12/14/13
24-EW11-121213-D	L103-13I	437	40	NA	20.0	5.20	10.0	12/21/1302:24	NA	AL27-65	AL27-62	ICL059W	12/12/1317:15	12/14/13

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L103
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	ICL051WB	ICL051WL	ICL051WC		
LAB FILE ID:	AL25-39	AL25-40	AL25-41		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	12/19/1320:14	12/19/1320:30	12/19/1320:45	DATE RECEIVED:	NA
PREP. BATCH:	ICL051W	ICL051W	ICL051W		
CALIB. REF:	AL25-37	AL25-37	AL25-37		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.89	98	5	4.89	98	0	90-110	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TREVET
PROJECT: TREASURE ISLAND IR SITES 21 & 24
BATCH NO.: 13L103
METHOD: METHOD 300.0

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	ICL059WB	ICL059WL	ICL059WC		
LAB FILE ID:	AL27-61	AL27-59	AL27-60		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	12/21/1301:23	12/21/1300:53	12/21/1301:08	DATE RECEIVED:	NA
PREP. BATCH:	ICL059W	ICL059W	ICL059W		
CALIB. REF:	AL27-50	AL27-50	AL27-50		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.81	96	5	4.81	96	0	90-110	20

METHOD SM2320B
ALKALINITY

Client : TREVET
Project : TREASURE ISLAND IR SITES 21 & 24
Batch No. : 13L103

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	LOQ (mg/L)	LOD (mg/L)	DL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALL018WB	ND	1	NA	5	5	5	12/20/1317:03	NA	13E5L1303	13E5L13	ALL018W	NA	NA
LCS1W	ALL018WL	111	1	NA	5	5	5	12/20/1317:10	NA	13E5L1304	13E5L13	ALL018W	NA	NA
LCD1W	ALL018WC	113	1	NA	5	5	5	12/20/1317:17	NA	13E5L1305	13E5L13	ALL018W	NA	NA
24-TW-28-121213	L103-08	966	1	NA	5	5	5	12/20/1319:31	NA	13E5L1317	13E5L13	ALL018W	12/12/1310:15	12/14/13
24-EW12-121213	L103-10	915	1	NA	5	5	5	12/20/1319:45	NA	13E5L1318	13E5L13	ALL018W	12/12/1313:55	12/14/13
24-TW-48-121213	L103-11	1020	1	NA	5	5	5	12/20/1319:59	NA	13E5L1319	13E5L13	ALL018W	12/12/1315:15	12/14/13
24-TW-47-121213	L103-12	716	1	NA	5	5	5	12/20/1320:11	NA	13E5L1320	13E5L13	ALL018W	12/12/1316:20	12/14/13
24-EW11-121213-D	L103-13	508	1	NA	5	5	5	12/20/1320:22	NA	13E5L1321	13E5L13	ALL018W	12/12/1317:15	12/14/13

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : TREVET
PROJECT : TREASURE ISLAND IR SITES 21 & 24
BATCH NO. : 13L103
METHOD : SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALL018WB	ALL018WL	ALL018WC
LAB FILE ID :	13E5L1303	13E5L1304	13E5L1305
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	12/20/1317:03	12/20/1317:10	12/20/1317:17
PREP BATCH :	ALL018W	ALL018W	ALL018W
CALIBRATION REF:	13E5L13	13E5L13	13E5L13

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Alkalinity	ND	121	111	92	121	113	93	2	90-110	20

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LABORATORY REPORT

January 30, 2014

Gerald Tamashiro
Trevet
9888 Carroll Centre Rd, Suite 228
San Diego, CA 92126

RE: Treasure Island Basewide Monitoring / A111

Dear Gerald:

Enclosed are the results of the samples submitted to our laboratory on December 21, 2013. For your reference, these analyses have been assigned our service request number P1305675. Please note the results were revised to denote client-specified synonyms for the EPA TO-15 analysis. All revised pages will be denoted with a "Revised Page" footer located in the bottom right-hand corner of the page. No data was altered in this revision.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen

By Samantha Henningsen at 12:11 pm, Jan 30, 2014

Samantha Henningsen
Project Manager

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Client: Trevet
Project: Treasure Island Basewide Monitoring / A111

Service Request No: P1305675

CASE NARRATIVE

The samples were received intact under chain of custody on December 21, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

Four of the samples were analyzed for fixed gases (oxygen/argon, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is not included on the laboratory's NELAP or AIHA-LAP scope of accreditation.

Helium Analysis

Six of the samples were analyzed for helium according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This method is not included on the laboratory's NELAP, DoD-ELAP or AIHA-LAP scope of accreditation.

Hydrogen Sulfide Analysis

Four of the samples were also analyzed for hydrogen sulfide per ASTM D 5504-08 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

Volatile Organic Compound Analysis

All of the samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. The method was modified to include the use of nitrogen as a diluent gas in place of zero-grade air for canister pressurization. This method is not included on the laboratory's AIHA-LAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

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Client: Trevet
Project: Treasure Island Basewide Monitoring / A111

Service Request No: P1305675

CASE NARRATIVE

The Summa canisters were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	581572
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-13-4
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272013-3
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Trevet

Service Request: P1305675

Project ID: Treasure Island Basewide Monitoring / A111

Date Received: 12/21/2013

Time Received: 11:40

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	3C Modified - Fxd Gases Can	ASTM D5504-08 - H2S Can	3C Modified - Helium Can	TO-15 - VOC Cans
21-SG-04	P1305675-001	Air	12/19/2013	10:15	SSC00215	-2.67	3.66	X	X	X	X
IR21-TB-121913	P1305675-002	Air	12/19/2013	10:30	SC01731	-14.30	3.74				X
21-SG-31	P1305675-003	Air	12/19/2013	12:10	SSC00214	-2.43	3.74			X	X
21-SG-27	P1305675-004	Air	12/19/2013	14:26	SSC00217	-2.43	3.55	X	X	X	X
21-SG-27-DUP	P1305675-005	Air	12/19/2013	14:26	SSC00218	-2.16	3.53	X	X	X	X
21-SG-30	P1305675-006	Air	12/19/2013	15:21	SSC00219	-1.97	3.83	X	X	X	X
21-SG-05	P1305675-007	Air	12/19/2013	16:31	SSC00216	-1.97	3.63			X	X

TREVET
9888 Carroll Centre Road, Suite 228
San Diego, CA 92126

COC NUMBER 121913-1

CHAIN-OF-CUSTODY RECORD

P1305675

PROJECT NAME: Treasure Island Basewide Monitoring	PURCHASE ORDER NO.: Send Invoice to Trevet
PROJECT LOCATION: NAVSTA Treasure Island	PROJECT NO.: A111
SAMPLER NAME: Daniel Byob	AIRBILL NUMBER:
PROJECT CONTACT: Gerald Tamashiro - TREVET	PROJECT CONTACT PHONE NUMBER: (714) 200-3826

LABORATORY NAME: ALS Environmental (805) 526-7161

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	VOCs (TO-15)	Helium (EPA 3C mod.)	O2, CO2, CH4 (EPA 3C mod.)	H2S (ASTM D5504)	COMMENTS
1	21-SG-04	12/19/13	1015	1 6L Silonite	X		A	10	X	X	X	X	SSC00215 -2.86
2	TR21-TB-121913	12/19/13	1030	1 6L Summa	X		A	10	X				SC01731 -14.60
3	21-SG-31	12/19/13	1210	1 6L Silonite	X		A	10	X	X			SSC00214 -2.65
4	21-SG-27	12/19/13	1426	1 6L Silonite	X		A	10	X	X	X	X	SSC00217 -2.66
5	21-SG-27-DUP	12/19/13	1426	1 6L Silonite	X		A	10	X	X	X	X	SSC00218 -2.38
6	21-SG-30	12/19/13	1521	1 6L Silonite		X	A	10	X	X	X	X	SSC00219 -2.24
7	21-SG-05	12/19/13	1631	1 6L Silonite	X		A	10	X	X			SSC00216 -2.26
													-14.57
													-14.56

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12/19/13

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
	12/19/13	FedEx
COMPANY: Trevet	TIME: 1730	COMPANY: FedEx
RELINQUISHED BY (Signature): Fedex	DATE: 12/21/13	RECEIVED BY (Signature): [illegible]
COMPANY	TIME: 1145	COMPANY: ALS
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

10 Day TAT

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: _____ SAMPLE CONDITION: INTACT BROKEN
COOLER SEAL: INTACT BROKEN

SAMPLING COMMENT:

ALS Environmental
Sample Acceptance Check Form

Client: Trevet Work order: P1305675

Project: Treasure Island Basewide Monitoring / A111

Sample(s) received on: 12/21/13 Date opened: 12/21/13 by: MZAMORA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☒	☐	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1305675-001.01	6.0 L Silonite Can					
P1305675-002.01	6.0 L Source Can					
P1305675-003.01	6.0 L Silonite Can					
P1305675-004.01	6.0 L Silonite Can					
P1305675-005.01	6.0 L Silonite Can					
P1305675-006.01	6.0 L Silonite Can					
P1305675-007.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-04**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P1305675-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00215

Date Collected: 12/19/13
Date Received: 12/21/13
Date Analyzed: 12/30/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -2.67 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.53

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**20.0**	0.15	
74-82-8	Methane	0.15	0.15	**U**
124-38-9	**Carbon Dioxide**	**1.20**	0.15	

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P1305675-004

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00217

Date Collected: 12/19/13
Date Received: 12/21/13
Date Analyzed: 12/30/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**21.1**	0.15	
74-82-8	Methane	0.15	0.15	**U**
124-38-9	**Carbon Dioxide**	**0.195**	0.15	

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27-DUP**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P1305675-005

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00218

Date Collected: 12/19/13
Date Received: 12/21/13
Date Analyzed: 12/30/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -2.16 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.45

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**21.1**	0.15	
74-82-8	Methane	0.15	0.15	**U**
124-38-9	**Carbon Dioxide**	**0.205**	0.15	

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-30**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P1305675-006

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00219

Date Collected: 12/19/13
Date Received: 12/21/13
Date Analyzed: 12/30/13
Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.83

Canister Dilution Factor: 1.46

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**21.0**	0.15	
74-82-8	Methane	0.15	0.15	**U**
124-38-9	**Carbon Dioxide**	**0.543**	0.15	

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **Method Blank**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P131230-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Silonite Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/30/13
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	Oxygen +			
7440-37-1	Argon	0.10	0.10	**U**
74-82-8	Methane	0.10	0.10	**U**
124-38-9	Carbon Dioxide	0.10	0.10	**U**

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P131230-DLCS

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Wade Henton Date Analyzed: 12/30/13
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ppmV	Result LCS ppmV	Result DLCS ppmV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7782-44-7	Oxygen +									
7440-37-1	Argon	50,000	51,400	50,800	**103**	**102**	88-114	1.0	9	
74-82-8	Methane	39,500	39,100	38,900	**99**	**98**	87-110	1	9	
124-38-9	Carbon Dioxide	49,300	49,200	48,900	**100**	**99**	84-109	1	9	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Method Blank Summary

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD Lab File ID: 12301302.D
Analyst: Wade Henton Date Analyzed: 12/30/13
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 08:17
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P131230-LCS	12301304.D	09:03
Duplicate Lab Control Sample	P131230-DLCS	12301305.D	09:21
21-SG-04	P1305675-001	12301315.D	12:52
21-SG-27	P1305675-004	12301317.D	13:44
21-SG-27-DUP	P1305675-005	12301318.D	14:03
21-SG-30	P1305675-006	12301319.D	14:20

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Helium

Test Code: EPA 3C Modified
Instrument ID: HP5890 II/GC8/TCD Date(s) Collected: 12/19/13
Analyst: Wade Henton Date Received: 12/21/13
Sample Type: 6.0 L Summa Canister(s) Date Analyzed: 12/30/13
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Canister Dilution Factor	Result ppmV	MRL ppmV	Result %, v/v	MRL %, v/v	Data Qualifier
21-SG-04	P1305675-001	1.00	1.53	**2,700**	38	**0.27**	0.0038	
21-SG-31	P1305675-003	1.00	1.50	**74**	38	**0.0074**	0.0038	
21-SG-27	P1305675-004	1.00	1.49	37	37	0.0037	0.0037	**U**
21-SG-27-DUP	P1305675-005	1.00	1.45	36	36	0.0036	0.0036	**U**
21-SG-30	P1305675-006	1.00	1.46	37	37	0.0037	0.0037	**U**
21-SG-05	P1305675-007	1.00	1.44	36	36	0.0036	0.0036	**U**
Method Blank	P131230-MB	1.00	1.00	25	25	0.0025	0.0025	**U**

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P131230-DLCS

Test Code: EPA 3C Modified
Instrument ID: HP5890 II/GC8/TCD
Analyst: Wade Henton
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/30/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ppmV	Result LCS ppmV	Result DLCS ppmV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7440-59-7	Helium	10,000	10,900	11,100	**109**	**111**	70-127	2	23	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Method Blank Summary

Test Code: EPA 3C Modified
Instrument ID: HP5890 II/GC8/TCD Lab File ID: 12301302.D
Analyst: Wade Henton Date Analyzed: 12/30/13
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 08:20
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P131230-LCS	12301303.D	08:30
Duplicate Lab Control Sample	P131230-DLCS	12301304.D	08:39
21-SG-04	P1305675-001	12301313.D	10:22
21-SG-31	P1305675-003	12301314.D	10:38
21-SG-27	P1305675-004	12301315.D	11:01
21-SG-27-DUP	P1305675-005	12301316.D	11:11
21-SG-30	P1305675-006	12301317.D	11:20
21-SG-05	P1305675-007	12301318.D	11:29

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Hydrogen Sulfide

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 12/19/13
Date Received: 12/21/13
Date Analyzed: 12/27/13

Client Sample ID	ALS Sample ID	Canister Dilution Factor	Injection Volume ml(s)	Time Analyzed	**Result µg/m³**	MRL µg/m³	**Result ppbV**	MRL ppbV	Data Qualifier
21-SG-04	P1305675-001	1.53	1.0	14:46	11	11	7.7	7.7	**U**
21-SG-27	P1305675-004	1.49	1.0	14:57	10	10	7.5	7.5	**U**
21-SG-27-DUP	P1305675-005	1.45	1.0	15:07	10	10	7.3	7.3	**U**
21-SG-30	P1305675-006	1.46	1.0	15:19	10	10	7.3	7.3	**U**
Method Blank	P131227-MB	1.00	1.0	08:31	7.0	7.0	5.0	5.0	**U**

U = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **Treasure Island Basewide Monitoring / A111**

ALS Project ID: P1305675
ALS Sample ID: P131227-DLCS

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/27/13
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ppbV	Result LCS ppbV	Result DLCS ppbV	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
7783-06-4	Hydrogen Sulfide	2,050	1,920	2,070	**94**	**101**	63-140	7	33	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Method Blank Summary

Test Code: ASTM D 5504-08
Instrument ID: Agilent 6890A/GC13/SCD Lab File ID: 12271306.D
Analyst: Mike Conejo Date Analyzed: 12/27/13
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 08:31
Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P131227-LCS	12271303.D	07:59
Duplicate Lab Control Sample	P131227-DLCS	12271304.D	08:03
21-SG-04	P1305675-001	12271325.D	14:46
21-SG-27	P1305675-004	12271326.D	14:57
21-SG-27-DUP	P1305675-005	12271327.D	15:07
21-SG-30	P1305675-006	12271328.D	15:19

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-04** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-001

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.015 Liter(s)
Container ID: SSC00215

Initial Pressure (psig): -2.67 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	23	31	23	9.2	**U**
75-01-4	Vinyl Chloride	24	31	24	10	**U**
74-83-9	Bromomethane	24	31	24	12	**U**
75-00-3	Chloroethane	24	31	24	10	**U**
75-35-4	1,1-Dichloroethene	26	31	26	10	**U**
75-09-2	Methylene Chloride	24	31	24	10	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	26	31	26	10	**U**
75-15-0	Carbon Disulfide	24	310	24	9.2	**U**
156-60-5	trans-1,2-Dichloroethene	26	31	26	12	**U**
75-34-3	1,1-Dichloroethane	26	31	26	9.8	**U**
1634-04-4	MTBE	26	31	26	10	**U**
156-59-2	cis-1,2-Dichloroethene	**47**	31	26	9.8	
67-66-3	Chloroform	26	31	26	10	**U**
107-06-2	1,2-Dichloroethane	26	31	26	9.8	**U**
71-55-6	1,1,1-Trichloroethane	**75**	31	25	10	
71-43-2	Benzene	27	31	27	9.8	**U**
56-23-5	Carbon Tetrachloride	26	31	26	9.2	**U**
78-87-5	1,2-Dichloropropane	26	31	26	9.8	**U**
75-27-4	Bromodichloromethane	26	31	26	9.2	**U**
79-01-6	Trichloroethene	**1,700**	31	26	8.6	
123-91-1	1,4-Dioxane	27	31	27	9.8	**U**
10061-01-5	cis-1,3-Dichloropropene	25	31	25	8.6	**U**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-04** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-001

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.015 Liter(s)
Container ID: SSC00215

Initial Pressure (psig): -2.67 Final Pressure (psig): 3.66

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	25	31	25	9.8	**U**
79-00-5	1,1,2-Trichloroethane	26	31	26	9.8	**U**
108-88-3	Toluene	26	31	26	10	**U**
124-48-1	Chlorodibromomethane	26	31	26	9.8	**U**
106-93-4	1,2-Dibromoethane	26	31	26	9.8	**U**
127-18-4	Tetrachloroethylene	**8,200**	51	40	14	**D**
108-90-7	Chlorobenzene	26	31	26	9.8	**U**
100-41-4	Ethylbenzene	26	31	26	9.8	**U**
179601-23-1	m,p-Xylenes	51	61	51	18	**U**
75-25-2	Bromoform	26	31	26	9.2	**U**
95-47-6	o-Xylene	25	31	25	9.2	**U**
79-34-5	1,1,2,2-Tetrachloroethane	24	31	24	9.2	**U**
98-82-8	Cumene	24	31	24	9.2	**U**
108-67-8	1,3,5-Trimethylbenzene	26	31	26	9.8	**U**
95-63-6	1,2,4-Trimethylbenzene	26	31	26	9.2	**U**
541-73-1	1,3-Dichlorobenzene	27	31	27	9.2	**U**
106-46-7	1,4-Dichlorobenzene	26	31	26	8.6	**U**
95-50-1	1,2-Dichlorobenzene	26	31	26	9.2	**U**
120-82-1	1,2,4-Trichlorobenzene	27	31	27	9.8	**U**
91-20-3	Naphthalene	25	31	25	11	**U**
87-68-3	Hexachloro-1,3-butadiene	27	31	27	8.6	**U**
630-20-6	1,1,1,2-Tetrachloroethane	31	31	NA	14	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **IR21-TB-121913** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-002

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC01731

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	0.38	0.50	0.38	0.15	U
75-01-4	Vinyl Chloride	0.39	0.50	0.39	0.17	U
74-83-9	Bromomethane	0.39	0.50	0.39	0.19	U
75-00-3	Chloroethane	0.39	0.50	0.39	0.17	U
75-35-4	1,1-Dichloroethene	0.42	0.50	0.42	0.17	U
75-09-2	Methylene Chloride	0.40	0.50	0.40	0.17	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.43	0.50	0.43	0.17	U
75-15-0	Carbon Disulfide	0.39	5.0	0.39	0.15	U
156-60-5	trans-1,2-Dichloroethene	0.42	0.50	0.42	0.19	U
75-34-3	1,1-Dichloroethane	0.42	0.50	0.42	0.16	U
1634-04-4	MTBE	0.42	0.50	0.42	0.17	U
156-59-2	cis-1,2-Dichloroethene	0.43	0.50	0.43	0.16	U
67-66-3	Chloroform	0.42	0.50	0.42	0.17	U
107-06-2	1,2-Dichloroethane	0.42	0.50	0.42	0.16	U
71-55-6	1,1,1-Trichloroethane	0.41	0.50	0.41	0.17	U
71-43-2	Benzene	0.44	0.50	0.44	0.16	U
56-23-5	Carbon Tetrachloride	0.42	0.50	0.42	0.15	U
78-87-5	1,2-Dichloropropane	0.42	0.50	0.42	0.16	U
75-27-4	Bromodichloromethane	0.43	0.50	0.43	0.15	U
79-01-6	Trichloroethene	0.42	0.50	0.42	0.14	U
123-91-1	1,4-Dioxane	0.44	0.50	0.44	0.16	U
10061-01-5	cis-1,3-Dichloropropene	0.41	0.50	0.41	0.14	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **IR21-TB-121913** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-002

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC01731

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	0.41	0.50	0.41	0.16	**U**
79-00-5	1,1,2-Trichloroethane	0.42	0.50	0.42	0.16	**U**
108-88-3	Toluene	**0.31**	0.50	0.42	0.17	**J**
124-48-1	Chlorodibromomethane	0.43	0.50	0.43	0.16	**U**
106-93-4	1,2-Dibromoethane	0.43	0.50	0.43	0.16	**U**
127-18-4	Tetrachloroethylene	0.39	0.50	0.39	0.14	**U**
108-90-7	Chlorobenzene	0.43	0.50	0.43	0.16	**U**
100-41-4	Ethylbenzene	0.43	0.50	0.43	0.16	**U**
179601-23-1	m,p-Xylenes	0.84	1.0	0.84	0.30	**U**
75-25-2	Bromoform	0.43	0.50	0.43	0.15	**U**
95-47-6	o-Xylene	0.41	0.50	0.41	0.15	**U**
79-34-5	1,1,2,2-Tetrachloroethane	0.40	0.50	0.40	0.15	**U**
98-82-8	Cumene	0.40	0.50	0.40	0.15	**U**
108-67-8	1,3,5-Trimethylbenzene	0.42	0.50	0.42	0.16	**U**
95-63-6	1,2,4-Trimethylbenzene	0.42	0.50	0.42	0.15	**U**
541-73-1	1,3-Dichlorobenzene	0.44	0.50	0.44	0.15	**U**
106-46-7	1,4-Dichlorobenzene	0.42	0.50	0.42	0.14	**U**
95-50-1	1,2-Dichlorobenzene	0.43	0.50	0.43	0.15	**U**
120-82-1	1,2,4-Trichlorobenzene	0.44	0.50	0.44	0.16	**U**
91-20-3	Naphthalene	0.41	0.50	0.41	0.18	**U**
87-68-3	Hexachloro-1,3-butadiene	0.44	0.50	0.44	0.14	**U**
630-20-6	1,1,1,2-Tetrachloroethane	0.50	0.50	NA	0.23	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-31** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-003

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00214

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	0.57	0.75	0.57	0.23	**U**
75-01-4	Vinyl Chloride	0.59	0.75	0.59	0.26	**U**
74-83-9	Bromomethane	0.59	0.75	0.59	0.29	**U**
75-00-3	Chloroethane	0.59	0.75	0.59	0.26	**U**
75-35-4	1,1-Dichloroethene	0.63	0.75	0.63	0.26	**U**
75-09-2	Methylene Chloride	0.60	0.75	0.60	0.26	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	**0.43**	0.75	0.65	0.26	**J**
75-15-0	Carbon Disulfide	0.59	7.5	0.59	0.23	**U**
156-60-5	trans-1,2-Dichloroethene	0.63	0.75	0.63	0.29	**U**
75-34-3	1,1-Dichloroethane	0.63	0.75	0.63	0.24	**U**
1634-04-4	MTBE	0.63	0.75	0.63	0.26	**U**
156-59-2	cis-1,2-Dichloroethene	0.65	0.75	0.65	0.24	**U**
67-66-3	Chloroform	**6.9**	0.75	0.63	0.26	
107-06-2	1,2-Dichloroethane	0.63	0.75	0.63	0.24	**U**
71-55-6	1,1,1-Trichloroethane	**0.34**	0.75	0.62	0.26	**J**
71-43-2	Benzene	0.66	0.75	0.66	0.24	**U**
56-23-5	Carbon Tetrachloride	**0.33**	0.75	0.63	0.23	**J**
78-87-5	1,2-Dichloropropane	0.63	0.75	0.63	0.24	**U**
75-27-4	Bromodichloromethane	0.65	0.75	0.65	0.23	**U**
79-01-6	Trichloroethene	**4.4**	0.75	0.63	0.21	
123-91-1	1,4-Dioxane	0.66	0.75	0.66	0.24	**U**
10061-01-5	cis-1,3-Dichloropropene	0.62	0.75	0.62	0.21	**U**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-31** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-003

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00214

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.74

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	0.62	0.75	0.62	0.24	**U**
79-00-5	1,1,2-Trichloroethane	0.63	0.75	0.63	0.24	**U**
108-88-3	Toluene	**0.70**	0.75	0.63	0.26	**J**
124-48-1	Chlorodibromomethane	0.65	0.75	0.65	0.24	**U**
106-93-4	1,2-Dibromoethane	0.65	0.75	0.65	0.24	**U**
127-18-4	Tetrachloroethylene	**13**	0.75	0.59	0.21	
108-90-7	Chlorobenzene	0.65	0.75	0.65	0.24	**U**
100-41-4	Ethylbenzene	0.65	0.75	0.65	0.24	**U**
179601-23-1	m,p-Xylenes	1.3	1.5	1.3	0.45	**U**
75-25-2	Bromoform	0.65	0.75	0.65	0.23	**U**
95-47-6	o-Xylene	0.62	0.75	0.62	0.23	**U**
79-34-5	1,1,2,2-Tetrachloroethane	0.60	0.75	0.60	0.23	**U**
98-82-8	Cumene	0.60	0.75	0.60	0.23	**U**
108-67-8	1,3,5-Trimethylbenzene	0.63	0.75	0.63	0.24	**U**
95-63-6	1,2,4-Trimethylbenzene	0.63	0.75	0.63	0.23	**U**
541-73-1	1,3-Dichlorobenzene	0.66	0.75	0.66	0.23	**U**
106-46-7	1,4-Dichlorobenzene	0.63	0.75	0.63	0.21	**U**
95-50-1	1,2-Dichlorobenzene	0.65	0.75	0.65	0.23	**U**
120-82-1	1,2,4-Trichlorobenzene	0.66	0.75	0.66	0.24	**U**
91-20-3	Naphthalene	0.62	0.75	0.62	0.27	**U**
87-68-3	Hexachloro-1,3-butadiene	0.66	0.75	0.66	0.21	**U**
630-20-6	1,1,1,2-Tetrachloroethane	0.75	0.75	NA	0.35	**U, X**

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J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-004

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00217

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	8.1	11	8.1	3.2	**U**
75-01-4	Vinyl Chloride	8.3	11	8.3	3.6	**U**
74-83-9	Bromomethane	8.3	11	8.3	4.0	**U**
75-00-3	Chloroethane	8.3	11	8.3	3.6	**U**
75-35-4	1,1-Dichloroethene	8.9	11	8.9	3.6	**U**
75-09-2	Methylene Chloride	8.5	11	8.5	3.6	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	9.2	11	9.2	3.6	**U**
75-15-0	Carbon Disulfide	8.3	110	8.3	3.2	**U**
156-60-5	trans-1,2-Dichloroethene	8.9	11	8.9	4.0	**U**
75-34-3	1,1-Dichloroethane	8.9	11	8.9	3.4	**U**
1634-04-4	MTBE	8.9	11	8.9	3.6	**U**
156-59-2	cis-1,2-Dichloroethene	**6.8**	11	9.2	3.4	**J**
67-66-3	Chloroform	**240**	11	8.9	3.6	
107-06-2	1,2-Dichloroethane	8.9	11	8.9	3.4	**U**
71-55-6	1,1,1-Trichloroethane	**34**	11	8.7	3.6	
71-43-2	Benzene	9.4	11	9.4	3.4	**U**
56-23-5	Carbon Tetrachloride	8.9	11	8.9	3.2	**U**
78-87-5	1,2-Dichloropropane	8.9	11	8.9	3.4	**U**
75-27-4	Bromodichloromethane	9.2	11	9.2	3.2	**U**
79-01-6	Trichloroethene	**690**	11	8.9	3.0	
123-91-1	1,4-Dioxane	9.4	11	9.4	3.4	**U**
10061-01-5	cis-1,3-Dichloropropene	8.7	11	8.7	3.0	**U**

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J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-004

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00217

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	8.7	11	8.7	3.4	**U**
79-00-5	1,1,2-Trichloroethane	8.9	11	8.9	3.4	**U**
108-88-3	Toluene	8.9	11	8.9	3.6	**U**
124-48-1	Chlorodibromomethane	9.2	11	9.2	3.4	**U**
106-93-4	1,2-Dibromoethane	9.2	11	9.2	3.4	**U**
127-18-4	Tetrachloroethylene	**1,800**	11	8.3	3.0	
108-90-7	Chlorobenzene	9.2	11	9.2	3.4	**U**
100-41-4	Ethylbenzene	9.2	11	9.2	3.4	**U**
179601-23-1	m,p-Xylenes	18	21	18	6.4	**U**
75-25-2	Bromoform	9.2	11	9.2	3.2	**U**
95-47-6	o-Xylene	8.7	11	8.7	3.2	**U**
79-34-5	1,1,2,2-Tetrachloroethane	8.5	11	8.5	3.2	**U**
98-82-8	Cumene	8.5	11	8.5	3.2	**U**
108-67-8	1,3,5-Trimethylbenzene	8.9	11	8.9	3.4	**U**
95-63-6	1,2,4-Trimethylbenzene	8.9	11	8.9	3.2	**U**
541-73-1	1,3-Dichlorobenzene	9.4	11	9.4	3.2	**U**
106-46-7	1,4-Dichlorobenzene	8.9	11	8.9	3.0	**U**
95-50-1	1,2-Dichlorobenzene	9.2	11	9.2	3.2	**U**
120-82-1	1,2,4-Trichlorobenzene	9.4	11	9.4	3.4	**U**
91-20-3	Naphthalene	8.7	11	8.7	3.8	**U**
87-68-3	Hexachloro-1,3-butadiene	9.4	11	9.4	3.0	**U**
630-20-6	1,1,1,2-Tetrachloroethane	11	11	NA	4.9	**U, X**

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LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27-DUP** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-005

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00218

Initial Pressure (psig): -2.16 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	7.9	10	7.9	3.1	**U**
75-01-4	Vinyl Chloride	8.1	10	8.1	3.5	**U**
74-83-9	Bromomethane	8.1	10	8.1	3.9	**U**
75-00-3	Chloroethane	8.1	10	8.1	3.5	**U**
75-35-4	1,1-Dichloroethene	8.7	10	8.7	3.5	**U**
75-09-2	Methylene Chloride	8.3	10	8.3	3.5	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	8.9	10	8.9	3.5	**U**
75-15-0	Carbon Disulfide	8.1	100	8.1	3.1	**U**
156-60-5	trans-1,2-Dichloroethene	8.7	10	8.7	3.9	**U**
75-34-3	1,1-Dichloroethane	8.7	10	8.7	3.3	**U**
1634-04-4	MTBE	8.7	10	8.7	3.5	**U**
156-59-2	cis-1,2-Dichloroethene	**7.0**	10	8.9	3.3	**J**
67-66-3	Chloroform	**240**	10	8.7	3.5	
107-06-2	1,2-Dichloroethane	8.7	10	8.7	3.3	**U**
71-55-6	1,1,1-Trichloroethane	**35**	10	8.5	3.5	
71-43-2	Benzene	9.1	10	9.1	3.3	**U**
56-23-5	Carbon Tetrachloride	8.7	10	8.7	3.1	**U**
78-87-5	1,2-Dichloropropane	8.7	10	8.7	3.3	**U**
75-27-4	Bromodichloromethane	8.9	10	8.9	3.1	**U**
79-01-6	Trichloroethene	**690**	10	8.7	2.9	
123-91-1	1,4-Dioxane	9.1	10	9.1	3.3	**U**
10061-01-5	cis-1,3-Dichloropropene	8.5	10	8.5	2.9	**U**

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LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-27-DUP** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-005

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00218

Initial Pressure (psig): -2.16 Final Pressure (psig): 3.53

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	8.5	10	8.5	3.3	**U**
79-00-5	1,1,2-Trichloroethane	8.7	10	8.7	3.3	**U**
108-88-3	Toluene	8.7	10	8.7	3.5	**U**
124-48-1	Chlorodibromomethane	8.9	10	8.9	3.3	**U**
106-93-4	1,2-Dibromoethane	8.9	10	8.9	3.3	**U**
127-18-4	Tetrachloroethylene	**1,800**	10	8.1	2.9	
108-90-7	Chlorobenzene	8.9	10	8.9	3.3	**U**
100-41-4	Ethylbenzene	8.9	10	8.9	3.3	**U**
179601-23-1	m,p-Xylenes	17	21	17	6.2	**U**
75-25-2	Bromoform	8.9	10	8.9	3.1	**U**
95-47-6	o-Xylene	8.5	10	8.5	3.1	**U**
79-34-5	1,1,2,2-Tetrachloroethane	8.3	10	8.3	3.1	**U**
98-82-8	Cumene	8.3	10	8.3	3.1	**U**
108-67-8	1,3,5-Trimethylbenzene	8.7	10	8.7	3.3	**U**
95-63-6	1,2,4-Trimethylbenzene	8.7	10	8.7	3.1	**U**
541-73-1	1,3-Dichlorobenzene	9.1	10	9.1	3.1	**U**
106-46-7	1,4-Dichlorobenzene	8.7	10	8.7	2.9	**U**
95-50-1	1,2-Dichlorobenzene	8.9	10	8.9	3.1	**U**
120-82-1	1,2,4-Trichlorobenzene	9.1	10	9.1	3.3	**U**
91-20-3	Naphthalene	8.5	10	8.5	3.7	**U**
87-68-3	Hexachloro-1,3-butadiene	9.1	10	9.1	2.9	**U**
630-20-6	1,1,1,2-Tetrachloroethane	10	10	NA	4.8	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-30** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-006

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: SSC00219

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.83

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	5.5	7.3	5.5	2.2	**U**
75-01-4	Vinyl Chloride	5.7	7.3	5.7	2.5	**U**
74-83-9	Bromomethane	5.7	7.3	5.7	2.8	**U**
75-00-3	Chloroethane	5.7	7.3	5.7	2.5	**U**
75-35-4	1,1-Dichloroethene	6.1	7.3	6.1	2.5	**U**
75-09-2	Methylene Chloride	5.8	7.3	5.8	2.5	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.3	7.3	6.3	2.5	**U**
75-15-0	Carbon Disulfide	5.7	73	5.7	2.2	**U**
156-60-5	trans-1,2-Dichloroethene	6.1	7.3	6.1	2.8	**U**
75-34-3	1,1-Dichloroethane	6.1	7.3	6.1	2.3	**U**
1634-04-4	MTBE	6.1	7.3	6.1	2.5	**U**
156-59-2	cis-1,2-Dichloroethene	6.3	7.3	6.3	2.3	**U**
67-66-3	Chloroform	**16**	7.3	6.1	2.5	
107-06-2	1,2-Dichloroethane	6.1	7.3	6.1	2.3	**U**
71-55-6	1,1,1-Trichloroethane	**19**	7.3	6.0	2.5	
71-43-2	Benzene	6.4	7.3	6.4	2.3	**U**
56-23-5	Carbon Tetrachloride	6.1	7.3	6.1	2.2	**U**
78-87-5	1,2-Dichloropropane	6.1	7.3	6.1	2.3	**U**
75-27-4	Bromodichloromethane	6.3	7.3	6.3	2.2	**U**
79-01-6	Trichloroethene	**180**	7.3	6.1	2.0	
123-91-1	1,4-Dioxane	6.4	7.3	6.4	2.3	**U**
10061-01-5	cis-1,3-Dichloropropene	6.0	7.3	6.0	2.0	**U**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-30** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-006

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.10 Liter(s)
Test Notes:
Container ID: SSC00219

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.83

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	6.0	7.3	6.0	2.3	**U**
79-00-5	1,1,2-Trichloroethane	6.1	7.3	6.1	2.3	**U**
108-88-3	Toluene	6.1	7.3	6.1	2.5	**U**
124-48-1	Chlorodibromomethane	6.3	7.3	6.3	2.3	**U**
106-93-4	1,2-Dibromoethane	6.3	7.3	6.3	2.3	**U**
127-18-4	Tetrachloroethylene	**1,200**	7.3	5.7	2.0	
108-90-7	Chlorobenzene	6.3	7.3	6.3	2.3	**U**
100-41-4	Ethylbenzene	6.3	7.3	6.3	2.3	**U**
179601-23-1	m,p-Xylenes	12	15	12	4.4	**U**
75-25-2	Bromoform	6.3	7.3	6.3	2.2	**U**
95-47-6	o-Xylene	6.0	7.3	6.0	2.2	**U**
79-34-5	1,1,2,2-Tetrachloroethane	5.8	7.3	5.8	2.2	**U**
98-82-8	Cumene	5.8	7.3	5.8	2.2	**U**
108-67-8	1,3,5-Trimethylbenzene	6.1	7.3	6.1	2.3	**U**
95-63-6	1,2,4-Trimethylbenzene	6.1	7.3	6.1	2.2	**U**
541-73-1	1,3-Dichlorobenzene	6.4	7.3	6.4	2.2	**U**
106-46-7	1,4-Dichlorobenzene	6.1	7.3	6.1	2.0	**U**
95-50-1	1,2-Dichlorobenzene	6.3	7.3	6.3	2.2	**U**
120-82-1	1,2,4-Trichlorobenzene	6.4	7.3	6.4	2.3	**U**
91-20-3	Naphthalene	6.0	7.3	6.0	2.6	**U**
87-68-3	Hexachloro-1,3-butadiene	6.4	7.3	6.4	2.0	**U**
630-20-6	1,1,1,2-Tetrachloroethane	7.3	7.3	NA	3.4	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-05** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-007

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: SSC00216

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	36	48	36	14	**U**
75-01-4	Vinyl Chloride	37	48	37	16	**U**
74-83-9	Bromomethane	37	48	37	18	**U**
75-00-3	Chloroethane	37	48	37	16	**U**
75-35-4	1,1-Dichloroethene	40	48	40	16	**U**
75-09-2	Methylene Chloride	38	48	38	16	**U**
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	41	48	41	16	**U**
75-15-0	Carbon Disulfide	37	480	37	14	**U**
156-60-5	trans-1,2-Dichloroethene	40	48	40	18	**U**
75-34-3	1,1-Dichloroethane	40	48	40	15	**U**
1634-04-4	MTBE	40	48	40	16	**U**
156-59-2	cis-1,2-Dichloroethene	41	48	41	15	**U**
67-66-3	Chloroform	40	48	40	16	**U**
107-06-2	1,2-Dichloroethane	40	48	40	15	**U**
71-55-6	1,1,1-Trichloroethane	**46**	48	39	16	**J**
71-43-2	Benzene	42	48	42	15	**U**
56-23-5	Carbon Tetrachloride	40	48	40	14	**U**
78-87-5	1,2-Dichloropropane	40	48	40	15	**U**
75-27-4	Bromodichloromethane	41	48	41	14	**U**
79-01-6	Trichloroethene	**1,500**	48	40	13	
123-91-1	1,4-Dioxane	42	48	42	15	**U**
10061-01-5	cis-1,3-Dichloropropene	39	48	39	13	**U**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **21-SG-05** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-007

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.015 Liter(s)
Test Notes:
Container ID: SSC00216

Initial Pressure (psig): -1.97 Final Pressure (psig): 3.63

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	39	48	39	15	**U**
79-00-5	1,1,2-Trichloroethane	40	48	40	15	**U**
108-88-3	Toluene	40	48	40	16	**U**
124-48-1	Chlorodibromomethane	41	48	41	15	**U**
106-93-4	1,2-Dibromoethane	41	48	41	15	**U**
127-18-4	Tetrachloroethylene	**8,900**	48	37	13	
108-90-7	Chlorobenzene	41	48	41	15	**U**
100-41-4	Ethylbenzene	41	48	41	15	**U**
179601-23-1	m,p-Xylenes	81	96	81	29	**U**
75-25-2	Bromoform	41	48	41	14	**U**
95-47-6	o-Xylene	39	48	39	14	**U**
79-34-5	1,1,2,2-Tetrachloroethane	38	48	38	14	**U**
98-82-8	Cumene	38	48	38	14	**U**
108-67-8	1,3,5-Trimethylbenzene	40	48	40	15	**U**
95-63-6	1,2,4-Trimethylbenzene	40	48	40	14	**U**
541-73-1	1,3-Dichlorobenzene	42	48	42	14	**U**
106-46-7	1,4-Dichlorobenzene	40	48	40	13	**U**
95-50-1	1,2-Dichlorobenzene	41	48	41	14	**U**
120-82-1	1,2,4-Trichlorobenzene	42	48	42	15	**U**
91-20-3	Naphthalene	39	48	39	17	**U**
87-68-3	Hexachloro-1,3-butadiene	42	48	42	13	**U**
630-20-6	1,1,1,2-Tetrachloroethane	48	48	NA	22	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **Method Blank** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140106-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	0.38	0.50	0.38	0.15	U
75-01-4	Vinyl Chloride	0.39	0.50	0.39	0.17	U
74-83-9	Bromomethane	0.39	0.50	0.39	0.19	U
75-00-3	Chloroethane	0.39	0.50	0.39	0.17	U
75-35-4	1,1-Dichloroethene	0.42	0.50	0.42	0.17	U
75-09-2	Methylene Chloride	0.40	0.50	0.40	0.17	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.43	0.50	0.43	0.17	U
75-15-0	Carbon Disulfide	0.39	5.0	0.39	0.15	U
156-60-5	trans-1,2-Dichloroethene	0.42	0.50	0.42	0.19	U
75-34-3	1,1-Dichloroethane	0.42	0.50	0.42	0.16	U
1634-04-4	MTBE	0.42	0.50	0.42	0.17	U
156-59-2	cis-1,2-Dichloroethene	0.43	0.50	0.43	0.16	U
67-66-3	Chloroform	0.42	0.50	0.42	0.17	U
107-06-2	1,2-Dichloroethane	0.42	0.50	0.42	0.16	U
71-55-6	1,1,1-Trichloroethane	0.41	0.50	0.41	0.17	U
71-43-2	Benzene	0.44	0.50	0.44	0.16	U
56-23-5	Carbon Tetrachloride	0.42	0.50	0.42	0.15	U
78-87-5	1,2-Dichloropropane	0.42	0.50	0.42	0.16	U
75-27-4	Bromodichloromethane	0.43	0.50	0.43	0.15	U
79-01-6	Trichloroethene	0.42	0.50	0.42	0.14	U
123-91-1	1,4-Dioxane	0.44	0.50	0.44	0.16	U
10061-01-5	cis-1,3-Dichloropropene	0.41	0.50	0.41	0.14	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **Method Blank** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140106-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	0.41	0.50	0.41	0.16	**U**
79-00-5	1,1,2-Trichloroethane	0.42	0.50	0.42	0.16	**U**
108-88-3	Toluene	0.42	0.50	0.42	0.17	**U**
124-48-1	Chlorodibromomethane	0.43	0.50	0.43	0.16	**U**
106-93-4	1,2-Dibromoethane	0.43	0.50	0.43	0.16	**U**
127-18-4	Tetrachloroethylene	0.39	0.50	0.39	0.14	**U**
108-90-7	Chlorobenzene	0.43	0.50	0.43	0.16	**U**
100-41-4	Ethylbenzene	0.43	0.50	0.43	0.16	**U**
179601-23-1	m,p-Xylenes	0.84	1.0	0.84	0.30	**U**
75-25-2	Bromoform	0.43	0.50	0.43	0.15	**U**
95-47-6	o-Xylene	0.41	0.50	0.41	0.15	**U**
79-34-5	1,1,2,2-Tetrachloroethane	0.40	0.50	0.40	0.15	**U**
98-82-8	Cumene	0.40	0.50	0.40	0.15	**U**
108-67-8	1,3,5-Trimethylbenzene	0.42	0.50	0.42	0.16	**U**
95-63-6	1,2,4-Trimethylbenzene	0.42	0.50	0.42	0.15	**U**
541-73-1	1,3-Dichlorobenzene	0.44	0.50	0.44	0.15	**U**
106-46-7	1,4-Dichlorobenzene	0.42	0.50	0.42	0.14	**U**
95-50-1	1,2-Dichlorobenzene	0.43	0.50	0.43	0.15	**U**
120-82-1	1,2,4-Trichlorobenzene	0.44	0.50	0.44	0.16	**U**
91-20-3	Naphthalene	0.41	0.50	0.41	0.18	**U**
87-68-3	Hexachloro-1,3-butadiene	0.44	0.50	0.44	0.14	**U**
630-20-6	1,1,1,2-Tetrachloroethane	0.50	0.50	NA	0.23	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **Method Blank** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140107-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
74-87-3	Chloromethane	0.38	0.50	0.38	0.15	U
75-01-4	Vinyl Chloride	0.39	0.50	0.39	0.17	U
74-83-9	Bromomethane	0.39	0.50	0.39	0.19	U
75-00-3	Chloroethane	0.39	0.50	0.39	0.17	U
75-35-4	1,1-Dichloroethene	0.42	0.50	0.42	0.17	U
75-09-2	Methylene Chloride	0.40	0.50	0.40	0.17	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.43	0.50	0.43	0.17	U
75-15-0	Carbon Disulfide	0.39	5.0	0.39	0.15	U
156-60-5	trans-1,2-Dichloroethene	0.42	0.50	0.42	0.19	U
75-34-3	1,1-Dichloroethane	0.42	0.50	0.42	0.16	U
1634-04-4	MTBE	0.42	0.50	0.42	0.17	U
156-59-2	cis-1,2-Dichloroethene	0.43	0.50	0.43	0.16	U
67-66-3	Chloroform	0.42	0.50	0.42	0.17	U
107-06-2	1,2-Dichloroethane	0.42	0.50	0.42	0.16	U
71-55-6	1,1,1-Trichloroethane	0.41	0.50	0.41	0.17	U
71-43-2	Benzene	0.44	0.50	0.44	0.16	U
56-23-5	Carbon Tetrachloride	0.42	0.50	0.42	0.15	U
78-87-5	1,2-Dichloropropane	0.42	0.50	0.42	0.16	U
75-27-4	Bromodichloromethane	0.43	0.50	0.43	0.15	U
79-01-6	Trichloroethene	0.42	0.50	0.42	0.14	U
123-91-1	1,4-Dioxane	0.44	0.50	0.44	0.16	U
10061-01-5	cis-1,3-Dichloropropene	0.41	0.50	0.41	0.14	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet**
Client Sample ID: **Method Blank** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140107-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	0.41	0.50	0.41	0.16	**U**
79-00-5	1,1,2-Trichloroethane	0.42	0.50	0.42	0.16	**U**
108-88-3	Toluene	0.42	0.50	0.42	0.17	**U**
124-48-1	Chlorodibromomethane	0.43	0.50	0.43	0.16	**U**
106-93-4	1,2-Dibromoethane	0.43	0.50	0.43	0.16	**U**
127-18-4	Tetrachloroethylene	0.39	0.50	0.39	0.14	**U**
108-90-7	Chlorobenzene	0.43	0.50	0.43	0.16	**U**
100-41-4	Ethylbenzene	0.43	0.50	0.43	0.16	**U**
179601-23-1	m,p-Xylenes	0.84	1.0	0.84	0.30	**U**
75-25-2	Bromoform	0.43	0.50	0.43	0.15	**U**
95-47-6	o-Xylene	0.41	0.50	0.41	0.15	**U**
79-34-5	1,1,2,2-Tetrachloroethane	0.40	0.50	0.40	0.15	**U**
98-82-8	Cumene	0.40	0.50	0.40	0.15	**U**
108-67-8	1,3,5-Trimethylbenzene	0.42	0.50	0.42	0.16	**U**
95-63-6	1,2,4-Trimethylbenzene	0.42	0.50	0.42	0.15	**U**
541-73-1	1,3-Dichlorobenzene	0.44	0.50	0.44	0.15	**U**
106-46-7	1,4-Dichlorobenzene	0.42	0.50	0.42	0.14	**U**
95-50-1	1,2-Dichlorobenzene	0.43	0.50	0.43	0.15	**U**
120-82-1	1,2,4-Trichlorobenzene	0.44	0.50	0.44	0.16	**U**
91-20-3	Naphthalene	0.41	0.50	0.41	0.18	**U**
87-68-3	Hexachloro-1,3-butadiene	0.44	0.50	0.44	0.14	**U**
630-20-6	1,1,1,2-Tetrachloroethane	0.50	0.50	NA	0.23	**U, X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantiation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
X = See case narrative.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Trevet**
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Project ID: P1305675

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 12/19/13
Analyst: Wida Ang Date(s) Received: 12/21/13
Sampling Media: 6.0 L Silonite Canister(s) Date(s) Analyzed: 1/6 - 1/7/14
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P140106-MB	**117**	**94**	**102**	70-130	
Method Blank	P140107-MB	**116**	**95**	**102**	70-130	
Lab Control Sample	P140106-LCS	**115**	**93**	**102**	70-130	
Lab Control Sample	P140107-LCS	**112**	**93**	**101**	70-130	
Duplicate Lab Control Sample	P140106-DLCS	**117**	**92**	**104**	70-130	
Duplicate Lab Control Sample	P140107-DLCS	**114**	**94**	**102**	70-130	
21-SG-04	P1305675-001	**115**	**92**	**103**	70-130	
IR21-TB-121913	P1305675-002	**116**	**95**	**100**	70-130	
21-SG-31	P1305675-003	**115**	**93**	**101**	70-130	
21-SG-27	P1305675-004	**118**	**92**	**103**	70-130	
21-SG-27	P1305675-004DUP	**118**	**92**	**103**	70-130	
21-SG-27-DUP	P1305675-005	**118**	**93**	**103**	70-130	
21-SG-30	P1305675-006	**119**	**92**	**104**	70-130	
21-SG-05	P1305675-007	**118**	**92**	**102**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140106-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-87-3	Chloromethane	198	164	159	**83**	**80**	59-132	4	25	
75-01-4	Vinyl Chloride	200	170	166	**85**	**83**	64-127	2	25	
74-83-9	Bromomethane	200	171	167	**86**	**84**	63-134	2	25	
75-00-3	Chloroethane	202	166	162	**82**	**80**	63-127	2	25	
75-35-4	1,1-Dichloroethene	214	184	182	**86**	**85**	61-133	1	25	
75-09-2	Methylene Chloride	216	181	179	**84**	**83**	62-115	1	25	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	214	183	184	**86**	**86**	66-126	0	25	
75-15-0	Carbon Disulfide	196	182	180	**93**	**92**	57-134	1	25	
156-60-5	trans-1,2-Dichloroethene	212	196	196	**92**	**92**	67-124	0	25	
75-34-3	1,1-Dichloroethane	208	184	185	**88**	**89**	68-126	1	25	
1634-04-4	MTBE	212	199	196	**94**	**92**	66-126	2	25	
156-59-2	cis-1,2-Dichloroethene	214	199	198	**93**	**93**	70-121	0	25	
67-66-3	Chloroform	214	201	200	**94**	**93**	68-123	1	25	
107-06-2	1,2-Dichloroethane	210	211	213	**100**	**101**	65-128	1	25	
71-55-6	1,1,1-Trichloroethane	206	197	194	**96**	**94**	68-125	2	25	
71-43-2	Benzene	220	195	192	**89**	**87**	69-119	2	25	
56-23-5	Carbon Tetrachloride	210	210	205	**100**	**98**	68-132	2	25	
78-87-5	1,2-Dichloropropane	212	181	179	**85**	**84**	69-123	1	25	
75-27-4	Bromodichloromethane	214	213	208	**100**	**97**	72-128	3	25	
79-01-6	Trichloroethene	208	183	179	**88**	**86**	71-123	2	25	
123-91-1	1,4-Dioxane	218	206	203	**94**	**93**	71-122	1	25	
10061-01-5	cis-1,3-Dichloropropene	226	212	209	**94**	**92**	70-128	2	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140106-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	216	213	211	**99**	**98**	75-133	1	25	
79-00-5	1,1,2-Trichloroethane	210	195	191	**93**	**91**	73-119	2	25	
108-88-3	Toluene	210	169	166	**80**	**79**	66-119	1	25	
124-48-1	Chlorodibromomethane	220	196	191	**89**	**87**	70-130	2	25	
106-93-4	1,2-Dibromoethane	216	182	178	**84**	**82**	74-122	2	25	
127-18-4	Tetrachloroethylene	196	160	156	**82**	**80**	66-124	2	25	
108-90-7	Chlorobenzene	216	178	175	**82**	**81**	70-119	1	25	
100-41-4	Ethylbenzene	212	182	179	**86**	**84**	70-124	2	25	
179601-23-1	m,p-Xylenes	420	383	375	**91**	**89**	61-134	2	25	
75-25-2	Bromoform	216	207	203	**96**	**94**	66-139	2	25	
95-47-6	o-Xylene	206	187	183	**91**	**89**	67-125	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	202	196	193	**97**	**96**	65-127	1	25	
98-82-8	Cumene	204	177	174	**87**	**85**	68-124	2	25	
108-67-8	1,3,5-Trimethylbenzene	212	191	187	**90**	**88**	67-130	2	25	
95-63-6	1,2,4-Trimethylbenzene	212	201	198	**95**	**93**	66-132	2	25	
541-73-1	1,3-Dichlorobenzene	222	208	205	**94**	**92**	65-130	2	25	
106-46-7	1,4-Dichlorobenzene	214	186	183	**87**	**86**	60-131	1	25	
95-50-1	1,2-Dichlorobenzene	218	191	188	**88**	**86**	63-129	2	25	
120-82-1	1,2,4-Trichlorobenzene	220	189	187	**86**	**85**	55-142	1	25	
91-20-3	Naphthalene	204	199	196	**98**	**96**	57-138	2	25	
87-68-3	Hexachloro-1,3-butadiene	218	187	185	**86**	**85**	56-138	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140107-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-87-3	Chloromethane	198	157	156	**79**	**79**	59-132	0	25	
75-01-4	Vinyl Chloride	200	165	172	**83**	**86**	64-127	4	25	
74-83-9	Bromomethane	200	166	176	**83**	**88**	63-134	6	25	
75-00-3	Chloroethane	202	162	172	**80**	**85**	63-127	6	25	
75-35-4	1,1-Dichloroethene	214	178	180	**83**	**84**	61-133	1	25	
75-09-2	Methylene Chloride	216	176	179	**81**	**83**	62-115	2	25	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	214	179	181	**84**	**85**	66-126	1	25	
75-15-0	Carbon Disulfide	196	176	178	**90**	**91**	57-134	1	25	
156-60-5	trans-1,2-Dichloroethene	212	190	192	**90**	**91**	67-124	1	25	
75-34-3	1,1-Dichloroethane	208	179	181	**86**	**87**	68-126	1	25	
1634-04-4	MTBE	212	193	192	**91**	**91**	66-126	0	25	
156-59-2	cis-1,2-Dichloroethene	214	194	194	**91**	**91**	70-121	0	25	
67-66-3	Chloroform	214	195	194	**91**	**91**	68-123	0	25	
107-06-2	1,2-Dichloroethane	210	205	203	**98**	**97**	65-128	1	25	
71-55-6	1,1,1-Trichloroethane	206	192	189	**93**	**92**	68-125	1	25	
71-43-2	Benzene	220	192	189	**87**	**86**	69-119	1	25	
56-23-5	Carbon Tetrachloride	210	204	201	**97**	**96**	68-132	1	25	
78-87-5	1,2-Dichloropropane	212	177	175	**83**	**83**	69-123	0	25	
75-27-4	Bromodichloromethane	214	208	204	**97**	**95**	72-128	2	25	
79-01-6	Trichloroethene	208	180	176	**87**	**85**	71-123	2	25	
123-91-1	1,4-Dioxane	218	202	200	**93**	**92**	71-122	1	25	
10061-01-5	cis-1,3-Dichloropropene	226	208	205	**92**	**91**	70-128	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Trevet**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P140107-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
10061-02-6	trans-1,3-Dichloropropene	216	209	205	**97**	**95**	75-133	2	25	
79-00-5	1,1,2-Trichloroethane	210	190	187	**90**	**89**	73-119	1	25	
108-88-3	Toluene	210	166	166	**79**	**79**	66-119	0	25	
124-48-1	Chlorodibromomethane	220	192	191	**87**	**87**	70-130	0	25	
106-93-4	1,2-Dibromoethane	216	178	178	**82**	**82**	74-122	0	25	
127-18-4	Tetrachloroethylene	196	157	156	**80**	**80**	66-124	0	25	
108-90-7	Chlorobenzene	216	174	174	**81**	**81**	70-119	0	25	
100-41-4	Ethylbenzene	212	178	177	**84**	**83**	70-124	1	25	
179601-23-1	m,p-Xylenes	420	372	369	**89**	**88**	61-134	1	25	
75-25-2	Bromoform	216	202	202	**94**	**94**	66-139	0	25	
95-47-6	o-Xylene	206	182	181	**88**	**88**	67-125	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	202	192	190	**95**	**94**	65-127	1	25	
98-82-8	Cumene	204	173	171	**85**	**84**	68-124	1	25	
108-67-8	1,3,5-Trimethylbenzene	212	185	186	**87**	**88**	67-130	1	25	
95-63-6	1,2,4-Trimethylbenzene	212	195	194	**92**	**92**	66-132	0	25	
541-73-1	1,3-Dichlorobenzene	222	201	200	**91**	**90**	65-130	1	25	
106-46-7	1,4-Dichlorobenzene	214	181	181	**85**	**85**	60-131	0	25	
95-50-1	1,2-Dichlorobenzene	218	187	186	**86**	**85**	63-129	1	25	
120-82-1	1,2,4-Trichlorobenzene	220	184	183	**84**	**83**	55-142	1	25	
91-20-3	Naphthalene	204	194	193	**95**	**95**	57-138	0	25	
87-68-3	Hexachloro-1,3-butadiene	218	181	181	**83**	**83**	56-138	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Trevet**
Client Sample ID: **21-SG-27** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-004DUP

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00217

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Chloromethane	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
MTBE	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	6.81	1.72	6.94	1.75	6.875	**2**	25	**J**
Chloroform	240	49.3	240	49.3	240	**0**	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	34.2	6.27	34.8	6.39	34.5	**2**	25	
Benzene	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	687	128	691	129	689	**0.6**	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Trevet**
Client Sample ID: **21-SG-27** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-004DUP

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00217

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	ND	ND	ND	ND	-	-	25	
Chlorodibromomethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
Tetrachloroethylene	1,830	270	1,830	271	1830	**0**	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachloro-1,3-butadiene	ND	ND	ND	ND	-	-	25	
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	**X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
X = See case narrative.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Trevet**
Client Sample ID: **21-SG-27** ALS Project ID: P1305675
Client Project ID: **Treasure Island Basewide Monitoring / A111** ALS Sample ID: P1305675-004DUP

Test Code: EPA TO-15 Date Collected: 12/19/13
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 12/21/13
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister Volume(s) Analyzed: 0.070 Liter(s)
Test Notes:
Container ID: SSC00217

Initial Pressure (psig): -2.43 Final Pressure (psig): 3.55

Canister Dilution Factor: 1.49

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	1,830	270	1,830	271	1830	**0**	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	**X**

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
X = See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet** ALS Project ID: P1305675

Client Project ID: **Treasure Island Basewide Monitoring / A111**

Method Blank Summary

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Lab File ID: 01061404.D

Analyst: Wida Ang Date Analyzed: 1/6/14

Sampling Media: 6.0 L Silonite Canister(s) Time Analyzed: 08:58

Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P140106-LCS	01061405.D	09:27
21-SG-04	P1305675-001	01061408.D	10:58
21-SG-04 (Dilution)	P1305675-001	01061412.D	13:02
IR21-TB-121913	P1305675-002	01061421.D	18:05
21-SG-27	P1305675-004	01061423.D	19:03
21-SG-27 (Lab Duplicate)	P1305675-004DUP	01061424.D	19:33
21-SG-27-DUP	P1305675-005	01061425.D	20:02
21-SG-30	P1305675-006	01061426.D	20:31
21-SG-05	P1305675-007	01061427.D	21:00
Duplicate Lab Control Sample	P140106-DLCS	01061428.D	21:30

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet** ALS Project ID: P1305675

Client Project ID: **Treasure Island Basewide Monitoring / A111**

Method Blank Summary

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Lab File ID: 01071414.D

Analyst: Wida Ang Date Analyzed: 1/7/14

Sampling Media: 6.0 L Silonite Canister(s) Time Analyzed: 08:04

Test Notes:

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P140107-LCS	01071415.D	08:33
Duplicate Lab Control Sample	P140107-DLCS	01071416.D	09:02
21-SG-31	P1305675-003	01071419.D	11:32

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet** ALS Project ID: P1305675

Client Project ID: **Treasure Island Basewide Monitoring / A111**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Lab File ID: 01061402.D
Analyst: Wida Ang Date Analyzed: 1/6/14
Sampling Media: 6.0 L Silonite Canister(s) Time Analyzed: 08:00
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	#	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	177267		8.93		863171		10.97		385415		14.55	
	Upper Limit	248174		9.26		1208439		11.30		539581		14.88	
	Lower Limit	106360		8.60		517903		10.64		231249		14.22	
	Client Sample ID												
01	Method Blank	187600		8.92		968222		10.97		421692		14.55	
02	Lab Control Sample	179373		8.93		887199		10.98		385854		14.55	
03	21-SG-04	181777		8.92		931906		10.97		409210		14.55	
04	21-SG-04 (Dilution)	185068		8.91		948686		10.97		408781		14.55	
05	IR21-TB-121913	191296		8.92		983607		10.97		420395		14.55	
06	21-SG-27	178366		8.92		914140		10.97		401651		14.55	
07	21-SG-27 (Lab Duplicate)	176137		8.92		897424		10.97		395312		14.55	
08	21-SG-27-DUP	175197		8.92		902612		10.97		393942		14.55	
09	21-SG-30	165364		8.91		858692		10.97		375995		14.55	
10	21-SG-05	168397		8.92		867344		10.97		382096		14.55	
11	Duplicate Lab Control Sample	171198		8.93		855461		10.98		373964		14.55	
12													
13													
14													
15													
16													
17													
18													
19													
20													

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the speicified limits.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Trevet** ALS Project ID: P1305675

Client Project ID: **Treasure Island Basewide Monitoring / A111**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Lab File ID: 01071413.D
Analyst: Wida Ang Date Analyzed: 1/7/14
Sampling Media: 6.0 L Silonite Canister(s) Time Analyzed: 07:35
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	**#**	**RT**	**AREA**	**#**	**RT**	**AREA**	**#**	**RT**
	24 Hour Standard	177726		8.93	868900		10.97	378742		14.55
	Upper Limit	248816		9.26	1216460		11.30	530239		14.88
	Lower Limit	106636		8.60	521340		10.64	227245		14.22
	Client Sample ID									
01	Method Blank	188895		8.92	967571		10.97	413595		14.55
02	Lab Control Sample	181492		8.93	892325		10.98	386149		14.55
03	Duplicate Lab Control Sample	182524		8.93	913785		10.98	389246		14.55
04	21-SG-31	200225		8.92	1026755		10.97	442378		14.55
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

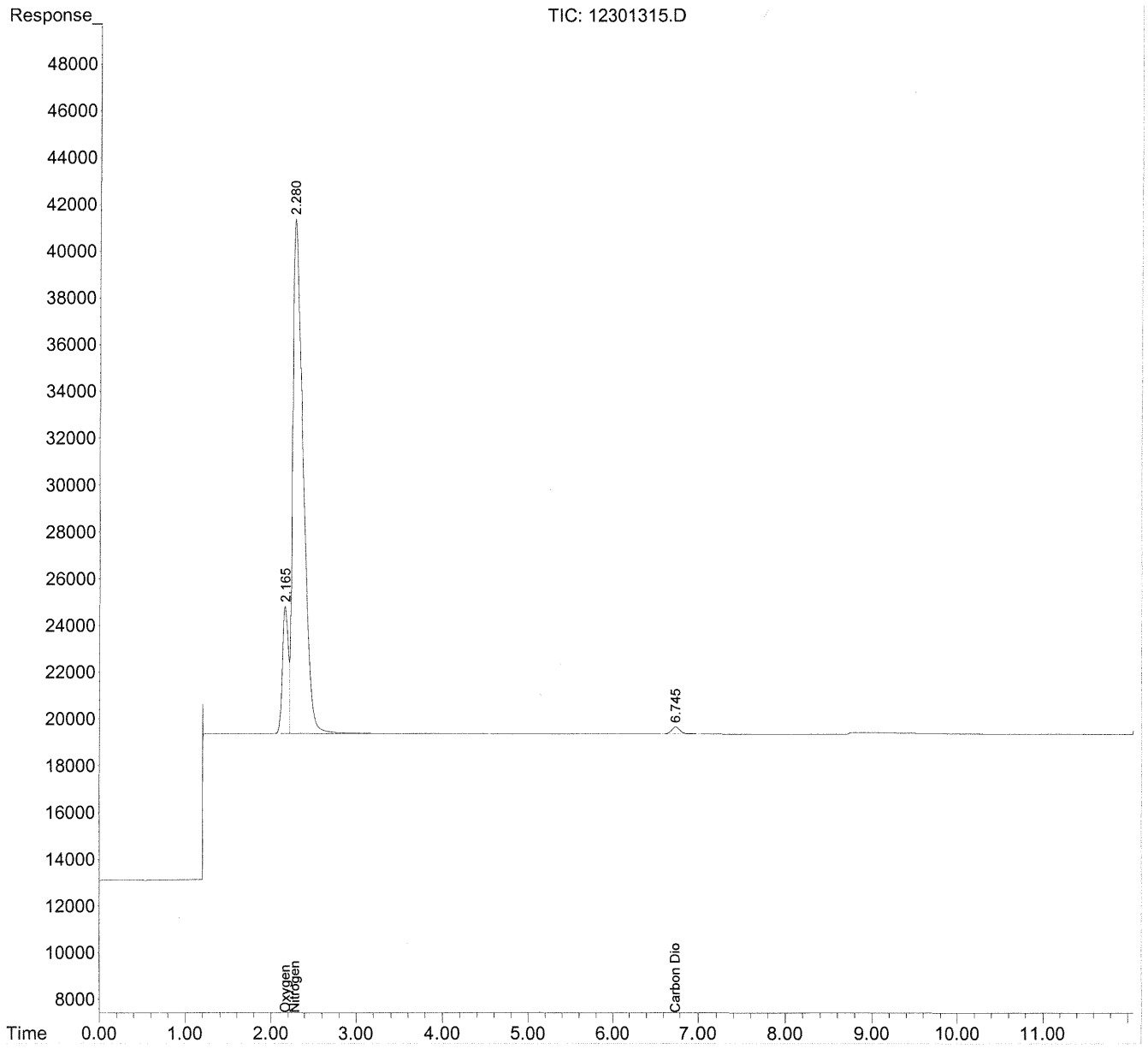
# Column used to flag values outside QC limits with an I.
I = Internal standard not within the speicified limits.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 12:52 pm
Operator : NL
Sample : 5675-001
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:43 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 12:52 pm
Operator : NL
Sample : 5675-001
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:43 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.000	0	N.D.	ppm
2)	Oxygen	2.166	257043	155847.024	ppm
3)	Nitrogen	2.282	1926741	1021515.468	ppm
4)	Carbon Monoxide	0.000	0	N.D.	ppm
5)	Methane	0.000	0	N.D.	ppm
6)	Carbon Dioxide	6.748	19831	9353.411	ppm

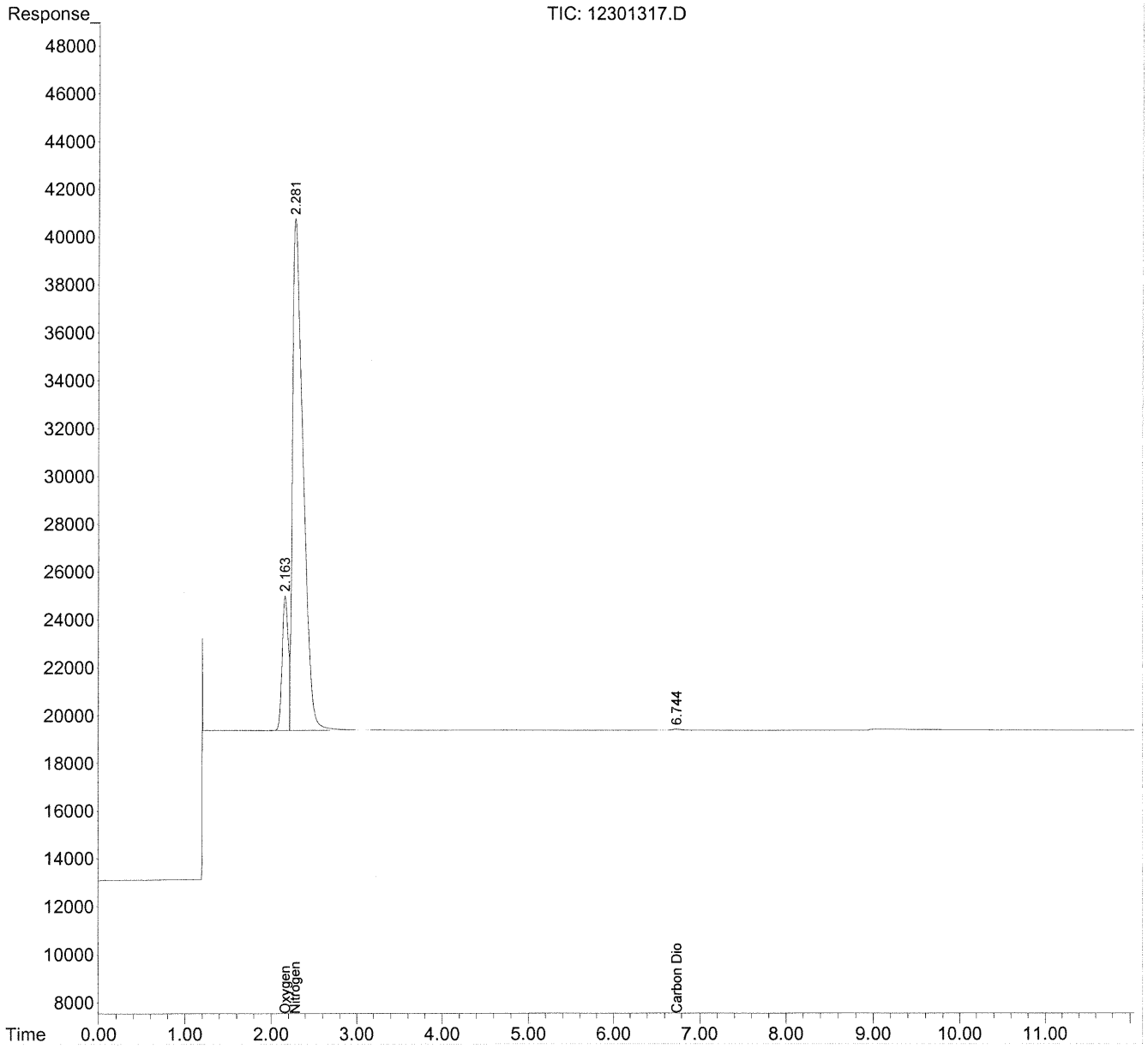
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301317.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 1:44 pm
Operator : NL
Sample : 5675-004
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:46 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301317.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 1:44 pm
Operator : NL
Sample : 5675-004
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:46 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.000	0	N.D.	ppm
2)	Oxygen	2.165	269128	163174.507	ppm
3)	Nitrogen	2.283	1858544	985358.891	ppm
4)	Carbon Monoxide	0.000	0	N.D.	ppm
5)	Methane	0.000	0	N.D.	ppm
6)	Carbon Dioxide	6.748	3202	1510.347	ppm

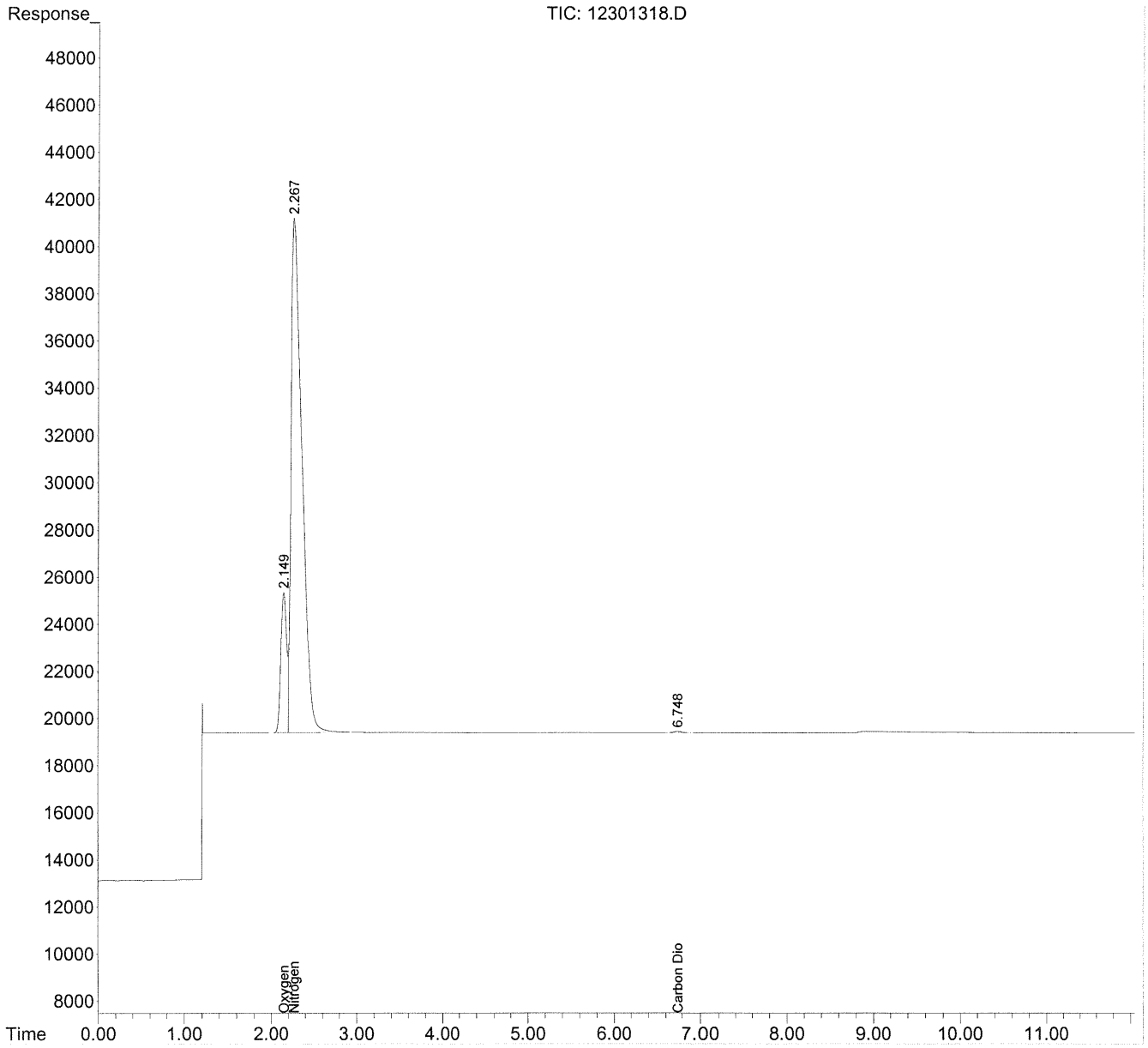
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301318.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 2:03 pm
Operator : NL
Sample : 5675-005
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:49 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301318.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 2:03 pm
Operator : NL
Sample : 5675-005
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:49 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.000	0	N.D.	ppm
2)	Oxygen	2.151	284916	172746.524	ppm
3)	Nitrogen	2.268	1916357	1016010.011	ppm
4)	Carbon Monoxide	0.000	0	N.D.	ppm
5)	Methane	0.000	0	N.D.	ppm
6)	Carbon Dioxide	6.751	3568	1682.628	ppm

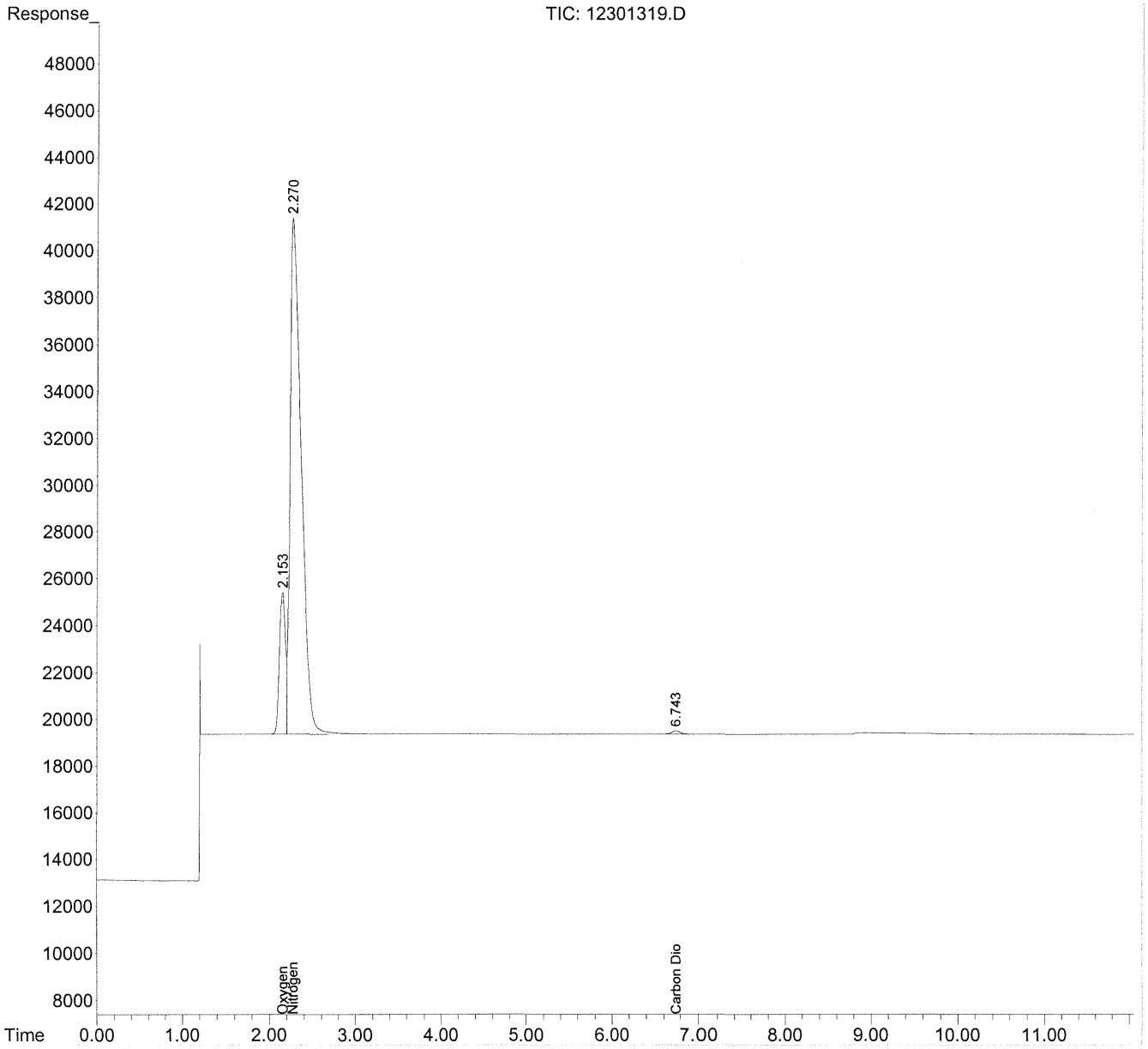
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301319.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 2:20 pm
Operator : NL
Sample : 5675-006
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:52 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301319.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 2:20 pm
Operator : NL
Sample : 5675-006
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:16:52 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.000	0	N.D.	ppm
2)	Oxygen	2.154	287414	174261.288	ppm
3)	Nitrogen	2.271	1945138	1031269.151	ppm
4)	Carbon Monoxide	0.000	0	N.D.	ppm
5)	Methane	0.000	0	N.D.	ppm
6)	Carbon Dioxide	6.745	9566	4511.951	ppm

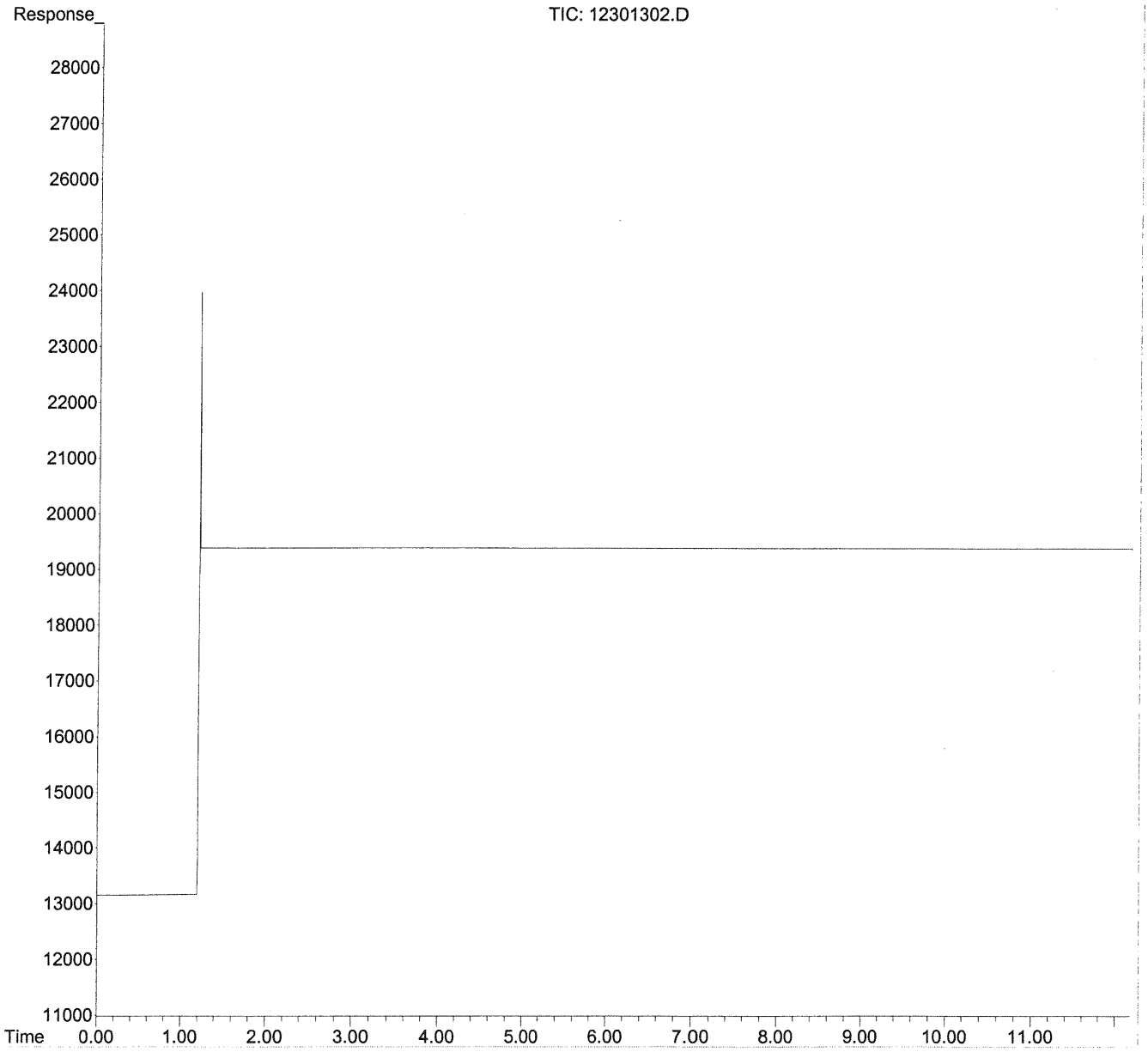
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301302.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 8:17 am
Operator : NL
Sample : mb
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:11:57 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301302.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 8:17 am
Operator : NL
Sample : mb
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:11:57 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.000	0	N.D.	ppm
2)	Oxygen	0.000	0	N.D.	ppm
3)	Nitrogen	0.000	0	N.D.	ppm
4)	Carbon Monoxide	0.000	0	N.D.	ppm
5)	Methane	0.000	0	N.D.	ppm
6)	Carbon Dioxide	0.000	0	N.D.	ppm

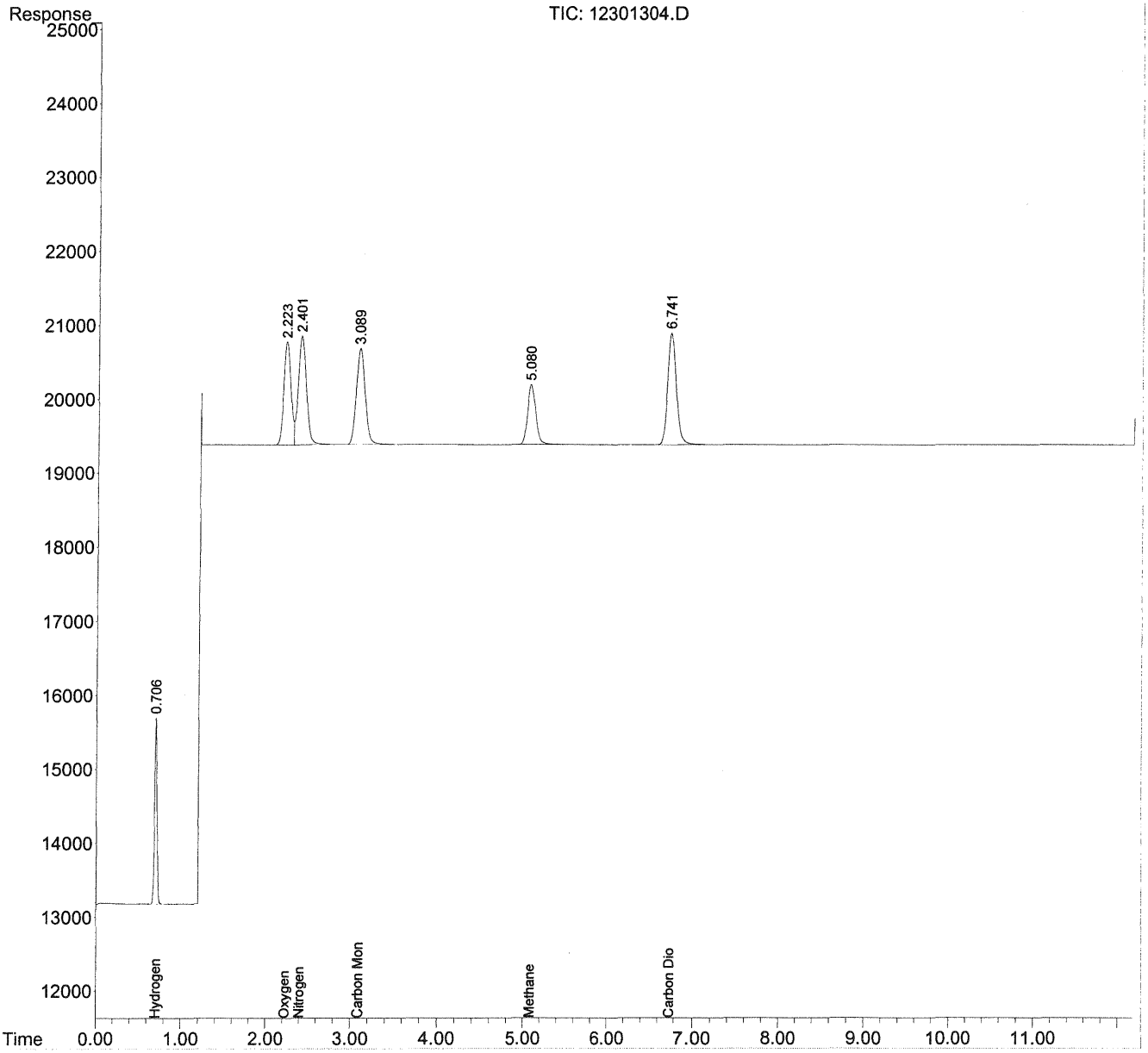
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301304.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 9:03 am
Operator : NL
Sample : lcs s27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:09 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301304.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 9:03 am
Operator : NL
Sample : lcs s27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:09 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.707	49909	36727.946	ppm
2)	Oxygen	2.224	84830	51432.794	ppm
3)	Nitrogen	2.402	99166	52575.583	ppm
4)	Carbon Monoxide	3.091	90995	50280.162	ppm
5)	Methane	5.082	54612	39087.921	ppm
6)	Carbon Dioxide	6.742	104276	49181.098	ppm

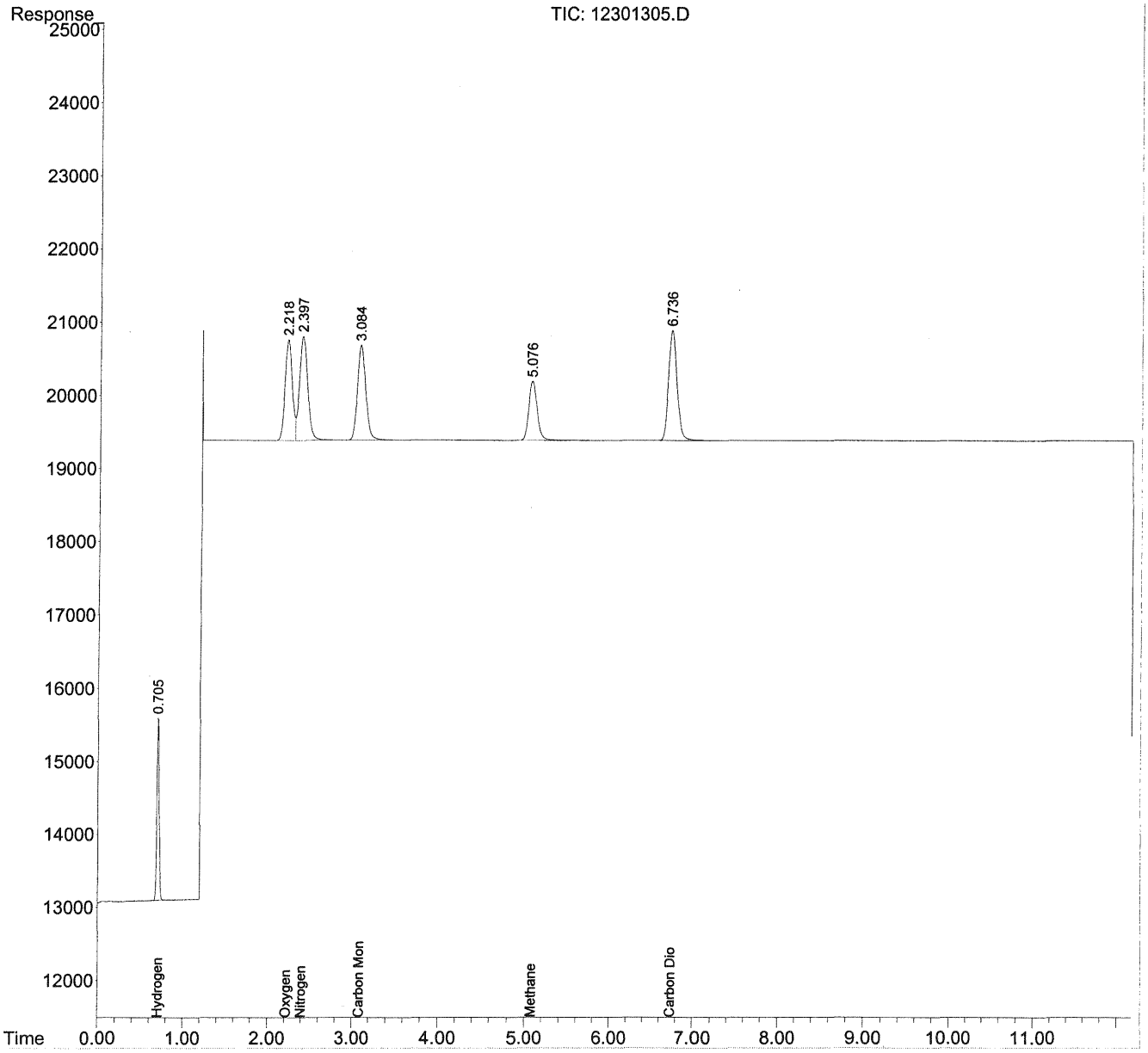
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301305.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 9:21 am
Operator : NL
Sample : lcsd s27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:15 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301305.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 9:21 am
Operator : NL
Sample : lcsd s27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:15 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.706	49593	36495.418	ppm
2)	Oxygen	2.220	83808	50813.472	ppm
3)	Nitrogen	2.398	95983	50888.228	ppm
4)	Carbon Monoxide	3.086	90193	49836.826	ppm
5)	Methane	5.077	54320	38878.680	ppm
6)	Carbon Dioxide	6.738	103621	48872.550	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Response Factor Report GC01

Method Path : J:\GC01\METHODS\
Method File : 3C112513.M
Title : EPA 3C GC/TCD Analysis for Fixed Gases
Last Update : Tue Nov 26 15:07:44 2013
Response Via : Initial Calibration

Calibration Files
1 =11251310.D 2 =11251311.D 3 =11251313.D
4 =11251315.D 5 =11251314.D 6 =11261307.D

	Compound	1	2	3	4	5	6	Avg	%RSD
1)	Hydrogen	1.274	1.280	1.333	1.312	1.595		1.359 E1	9.88
2)	Oxygen	1.523	1.638	1.715	1.675	1.681		1.649 E1	4.03
3)	Nitrogen	1.787	1.986	1.934	1.892	1.940	1.779	1.886 E1	4.53
4)	Carbon Monoxide	1.565	1.757	1.928	1.884	1.915		1.810 E1	8.45
5)	Methane	1.270	1.436	1.460	1.418	1.440		1.397 E1	5.09
6)	Carbon Dioxide	1.919	2.150	2.219	2.181	2.183		2.120 E1	5.22

(#) = Out of Range ### Number of calibration levels exceeded format ###

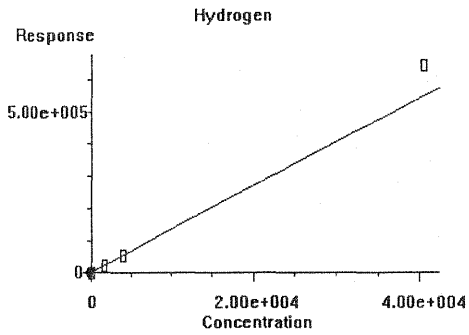
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen
  - Oxygen
  - Nitrogen
  - Carbon Monoxide
  - Methane
  - Carbon Dioxide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	50.410000	642.323750			
2	119.970000	1536.121667			
3	1680.379800	22399.292500			
4	3999.000000	52451.707917			
5	40278.648000	642507.728333			
6	99999.000000				
7	99000.000000				
8	99800.000000				
9	99999.000000				



0.000e+000	Quadratic term
1.359e+001	Linear term
0.000e+000	Constant term
9.9%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

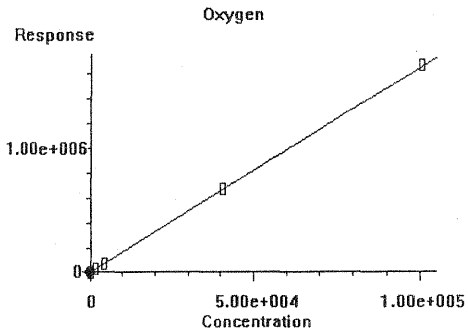
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen
  - Oxygen
  - Nitrogen
  - Carbon Monoxide
  - Methane
  - Carbon Dioxide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	50.460000	768.720000			
2	120.090000	1967.388770			
3	1682.060600	28841.316050			
4	4003.000000	67055.550496			
5	40318.936500	677584.450000			
6	99999.000000				
7	99000.000000				
8	99800.000000				
9	99999.000000	1663932.472500			



0.000e+000	Quadratic term
1.649e+001	Linear term
0.000e+000	Constant term
4.0%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

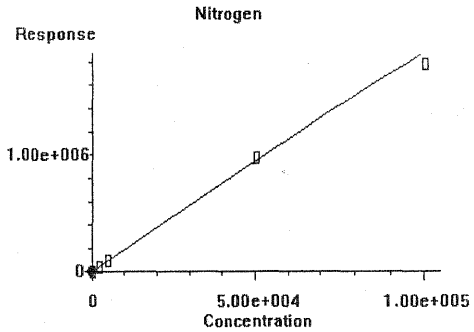
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen
  - Oxygen
  - [illegible]
  - Carbon Monoxide
  - Methane
  - Carbon Dioxide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	63.030000	1126.240000			
2	150.000000	2978.316230			
3	2101.000000	40635.380825			
4	5000.000000	94585.002004			
5	50360.900000	977077.042580			
6	99999.000000	1778617.426250			
7	99000.000000				
8	99800.000000				
9	99999.000000				



0.000e+000	Quadratic term
1.886e+001	Linear term
0.000e+000	Constant term
4.5%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

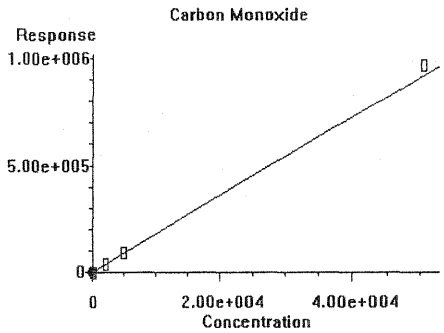
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen
  - Oxygen
  - Nitrogen
  - [illegible]
  - Methane
  - Carbon Dioxide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	63.040000	986.289600			
2	150.030000	2636.095000			
3	2101.420000	40507.603500			
4	5001.000000	94239.874375			
5	50370.970000	964675.340000			
6	99999.000000				
7	99000.000000				
8	99800.000000				
9	99999.000000				



0.000e+000	Quadratic term
1.810e+001	Linear term
0.000e+000	Constant term
8.4%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

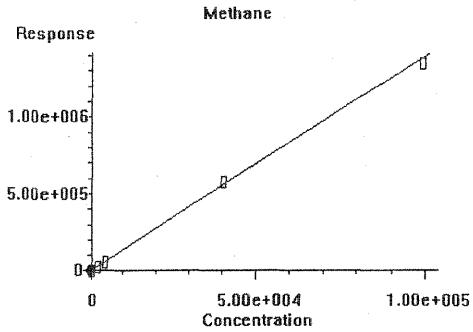
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen
  - Oxygen
  - Nitrogen
  - Carbon Monoxide
  - [illegible]
  - Carbon Dioxide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	50.386000	639.847200			
2	119.910000	1721.630833			
3	1679.539000	24519.018281			
4	3997.000000	56660.595000			
5	40258.500000	579737.875714			
6	99999.000000				
7	99000.000000	1346209.540000			
8	99800.000000				
9	99999.000000				



0.000e+000	Quadratic term
1.397e+001	Linear term
0.000e+000	Constant term
5.1%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

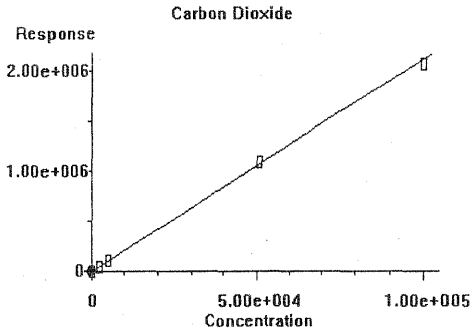
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Hydrogen
  - Oxygen
  - Nitrogen
  - Carbon Monoxide
  - Methane
  - [illegible]

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	63.080000	1210.448120			
2	150.120000	3226.857500			
3	2102.680000	46657.295000			
4	5004.000000	109138.675000			
5	50401.188700	1100045.839167			
6	99999.000000				
7	99000.000000				
8	99800.000000	2066307.073750			
9	99999.000000				



0.000e+000	Quadratic term
2.120e+001	Linear term
0.000e+000	Constant term
5.2%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report GC01

Method Path : J:\GC01\METHODS\
Method File : 3C112513.M
Title : EPA 3C GC/TCD Analysis for Fixed Gases
Last Update : Mon Dec 09 13:50:11 2013
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	63	0	J:\GC01\DATA\FXG\2013_11\25\11251310.D
2	2	150	0	J:\GC01\DATA\FXG\2013_11\25\11251311.D
3	3	2103	0	J:\GC01\DATA\FXG\2013_11\25\11251313.D
4	4	5004	0	J:\GC01\DATA\FXG\2013_11\25\11251315.D
5	5	50401	0	J:\GC01\DATA\FXG\2013_11\25\11251314.D
6	6	99999	0	J:\GC01\DATA\FXG\2013_11\26\11261307.D
7	7	99000	0	J:\GC01\DATA\FXG\2013_11\26\11261302.D
8	8	99800	0	J:\GC01\DATA\FXG\2013_11\26\11261305.D
9	9	99999	0	J:\GC01\DATA\FXG\2013_11\26\11261303.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Nov 25 17:25 2013	Nov 25 17:22 2013	25 Nov 2013 3:19 pm
2	2	Nov 25 17:43 2013	Nov 25 17:42 2013	25 Nov 2013 3:40 pm
3	3	Nov 25 17:43 2013	Nov 25 17:43 2013	25 Nov 2013 4:49 pm
4	4	Nov 26 15:07 2013	Nov 26 15:07 2013	25 Nov 2013 5:39 pm
5	5	Nov 25 17:54 2013	Nov 25 17:53 2013	25 Nov 2013 5:09 pm
6	6	Nov 26 14:38 2013	Nov 26 14:38 2013	26 Nov 2013 1:37 pm
7	7	Nov 26 11:22 2013	Nov 26 11:21 2013	26 Nov 2013 10:41 am
8	8	Nov 26 12:49 2013	Nov 26 12:48 2013	26 Nov 2013 11:57 am
9	9	Dec 09 13:50 2013	Nov 26 11:46 2013	26 Nov 2013 11:20 am

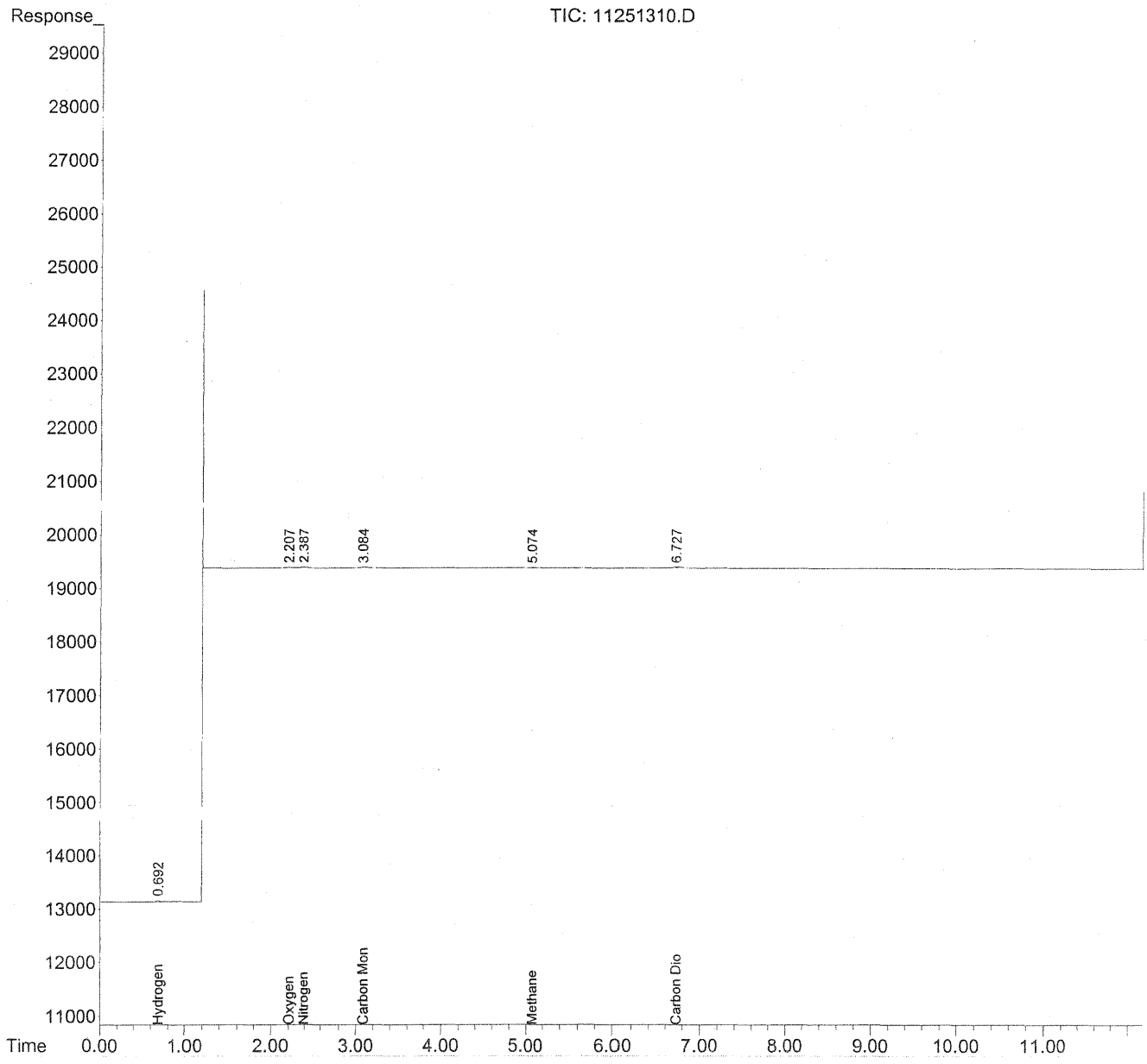
3C112513.M Mon Dec 09 13:50:38 2013

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

WH 11/27/13

Compound	R.T.	Response	Conc	Units	
Target Compounds					
1) Hydrogen	0.694	642	524.557	ppm	
2) Oxygen	2.207	769	495.752	ppm	m
3) Nitrogen	2.387	1126	635.180	ppm	m
4) Carbon Monoxide	3.084	986	572.040	ppm	m
5) Methane	5.074	640	479.918	ppm	m
6) Carbon Dioxide	6.727	1210	587.781	ppm	m

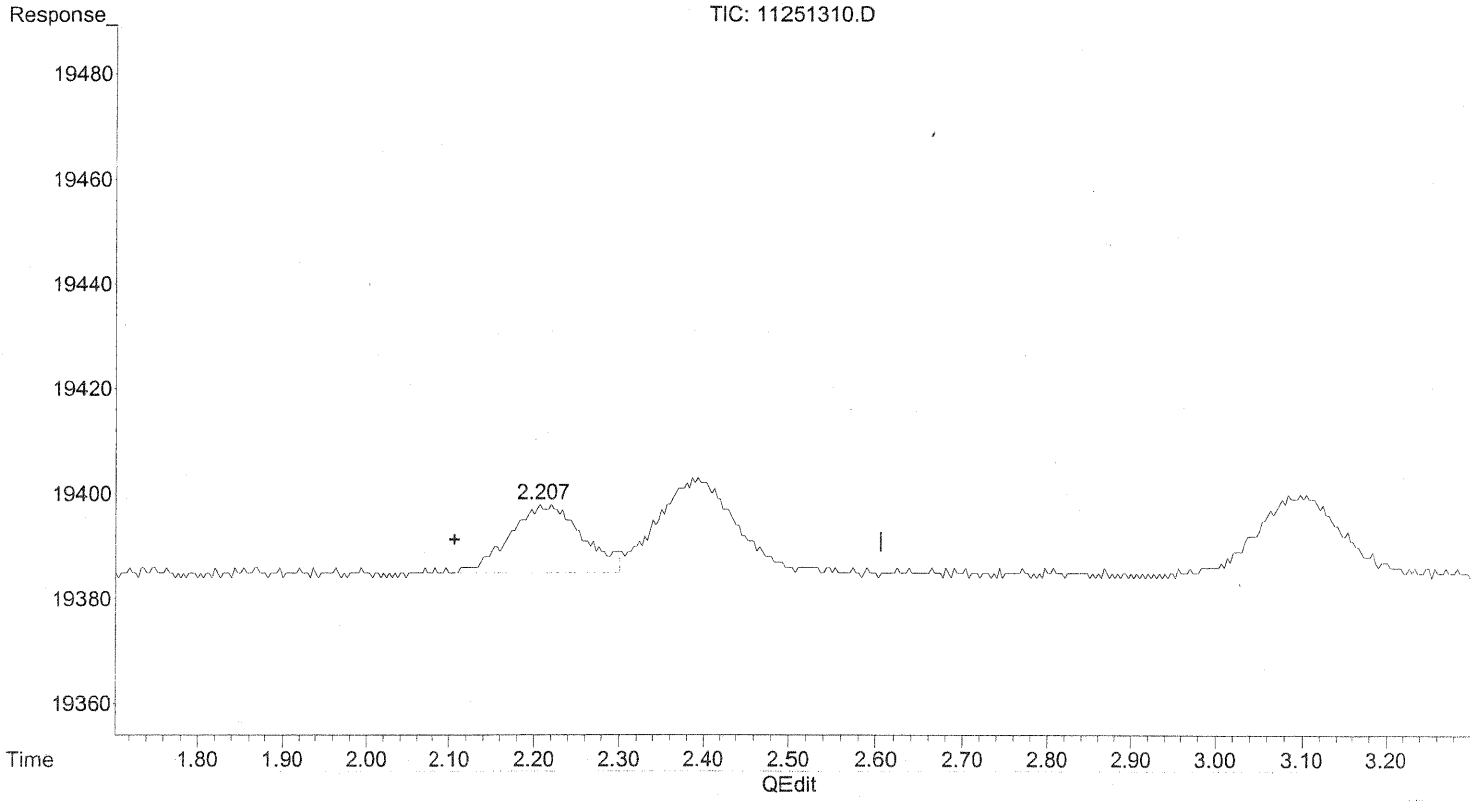
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(2) Oxygen
2.207min 495.752 ppm m
response 769

WH 11/26/13
BLC
no previous
27NOV13

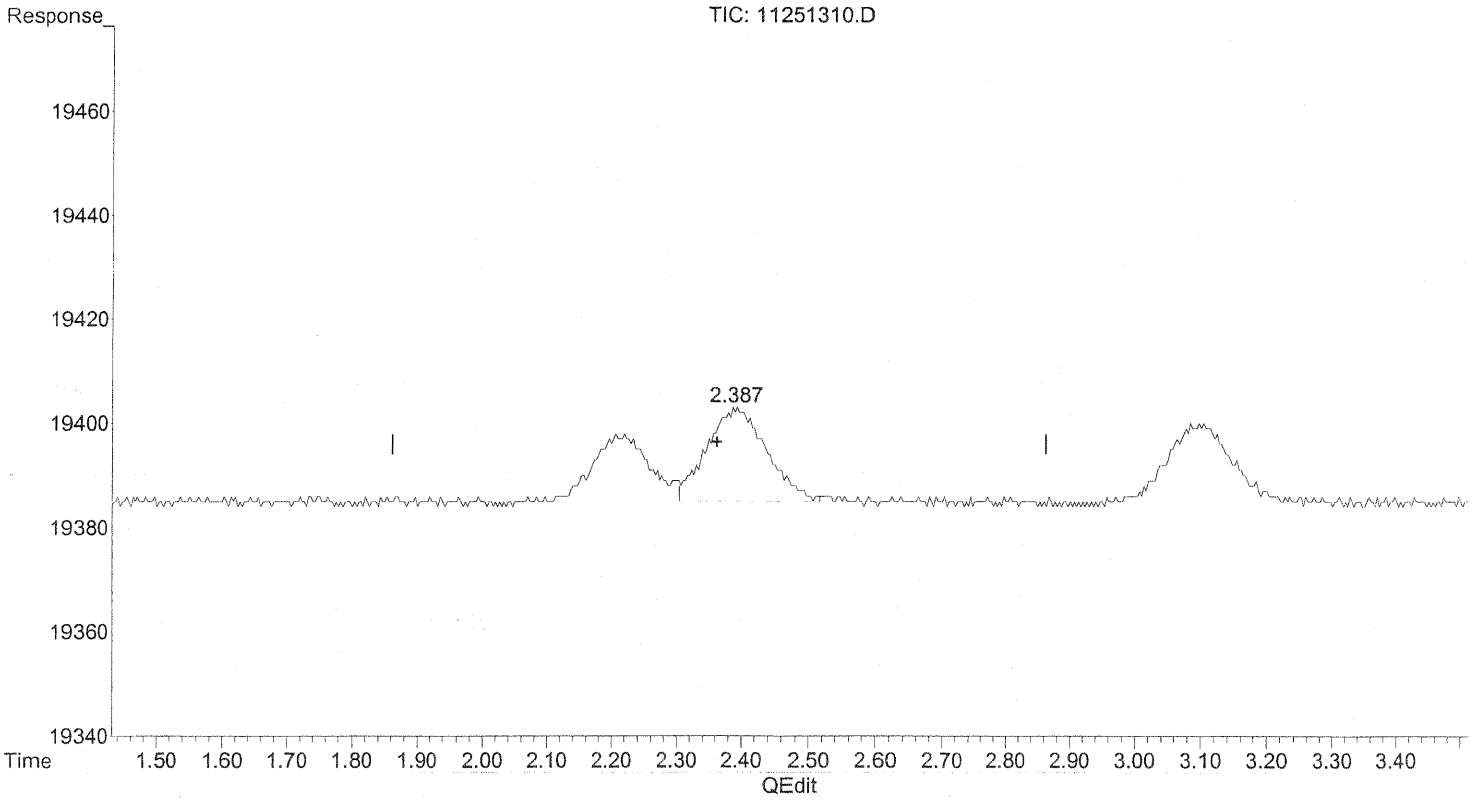
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(3) Nitrogen
2.387min 635.180 ppm m
response 1126

WH 11/26/13
BLC
27NOV13 no previous

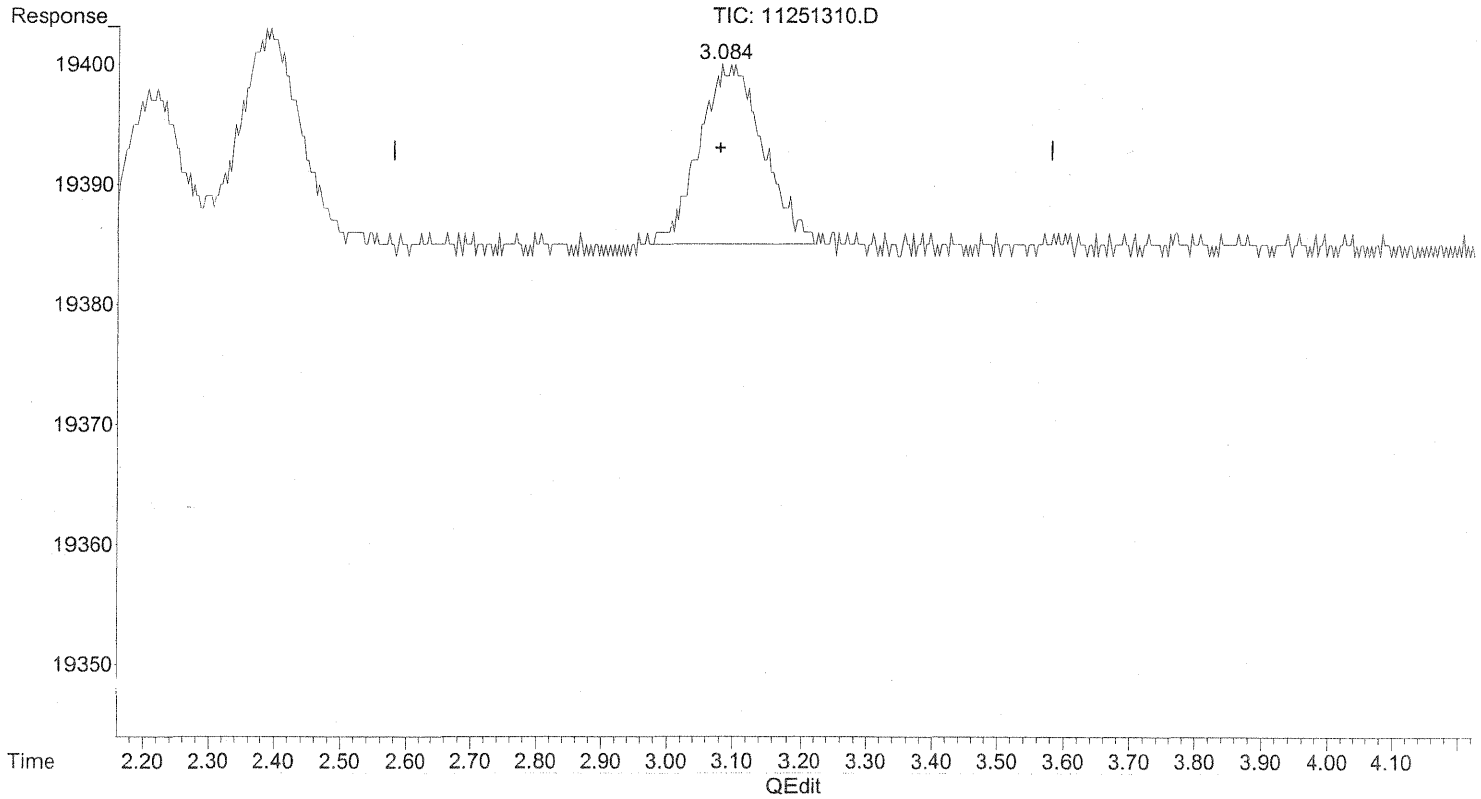
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(4) Carbon Monoxide
3.084min 572.040 ppm m
response 986

LW 11/26/13
BLL
11/27/13 no previous

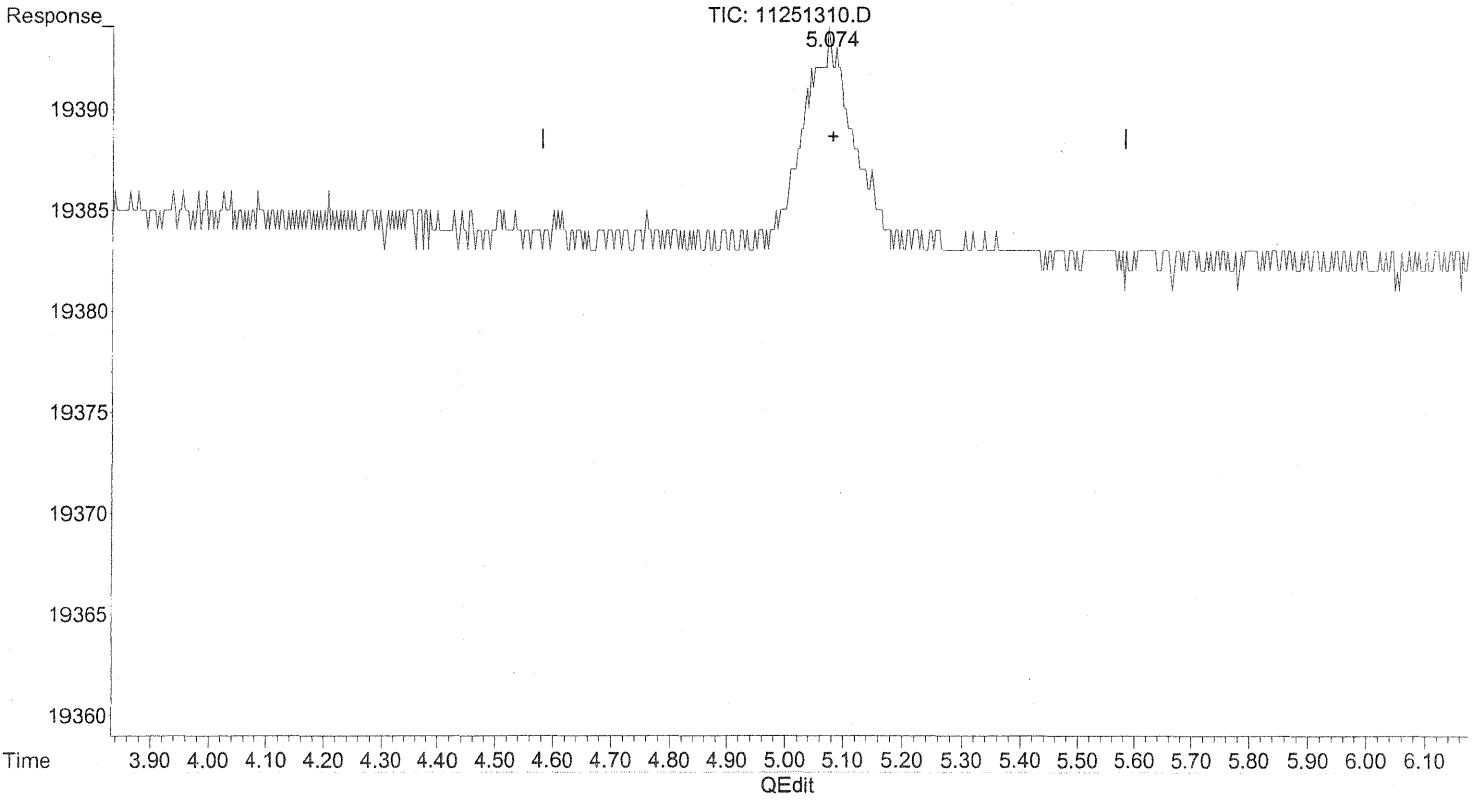
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(5) Methane
5.074min 479.918 ppm m
response 640

LW 11/26/13
BLC
no previous
27 Nov 13

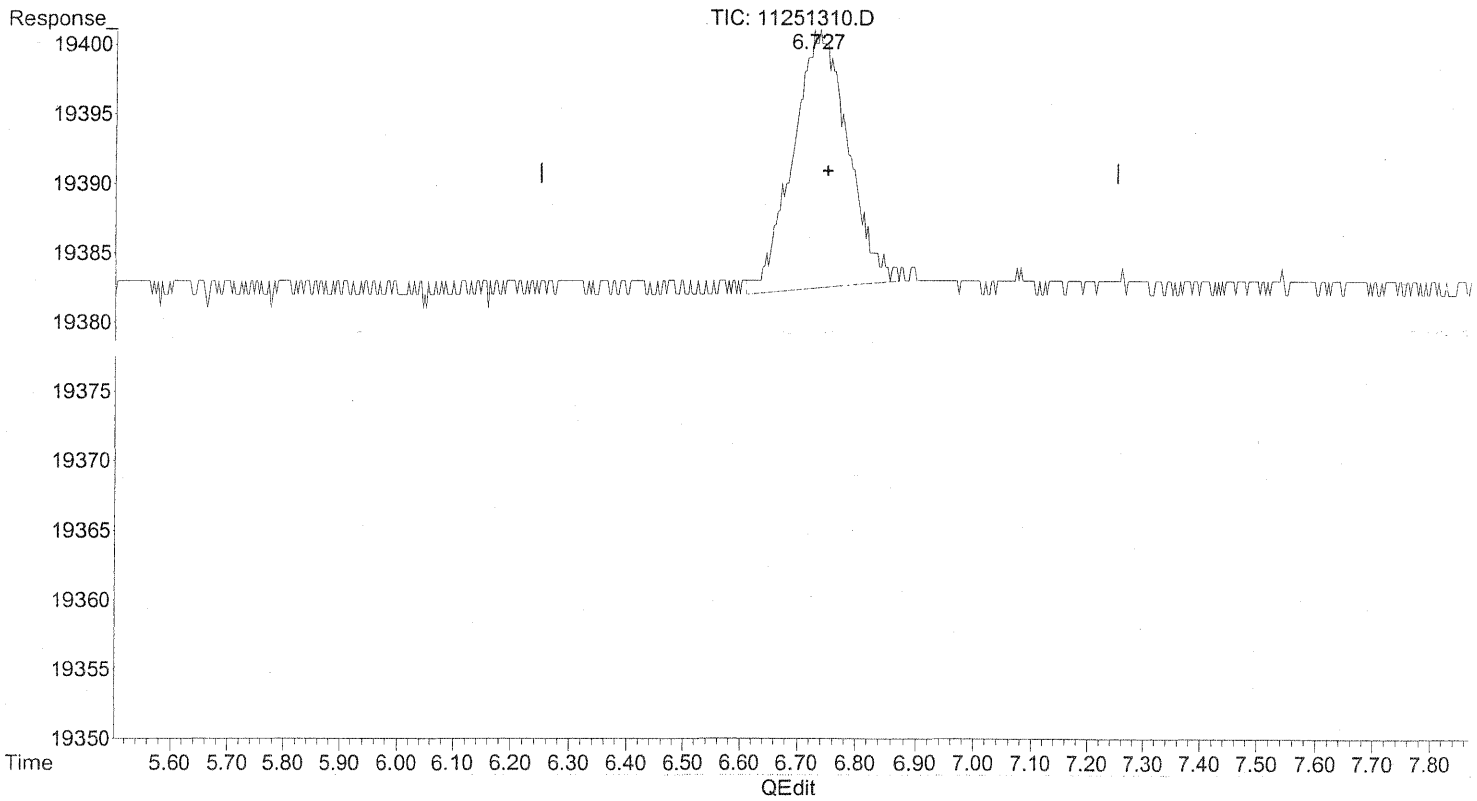
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251310.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:19 pm
Operator : WH
Sample : STD 630/504ppm
Misc : 0.42 loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:22:27 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Wed Nov 28 17:29:51 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(6) Carbon Dioxide
6.727min 587.781 ppm m
response 1210

WH 11/26/13
BLC
no previous
27NOV13

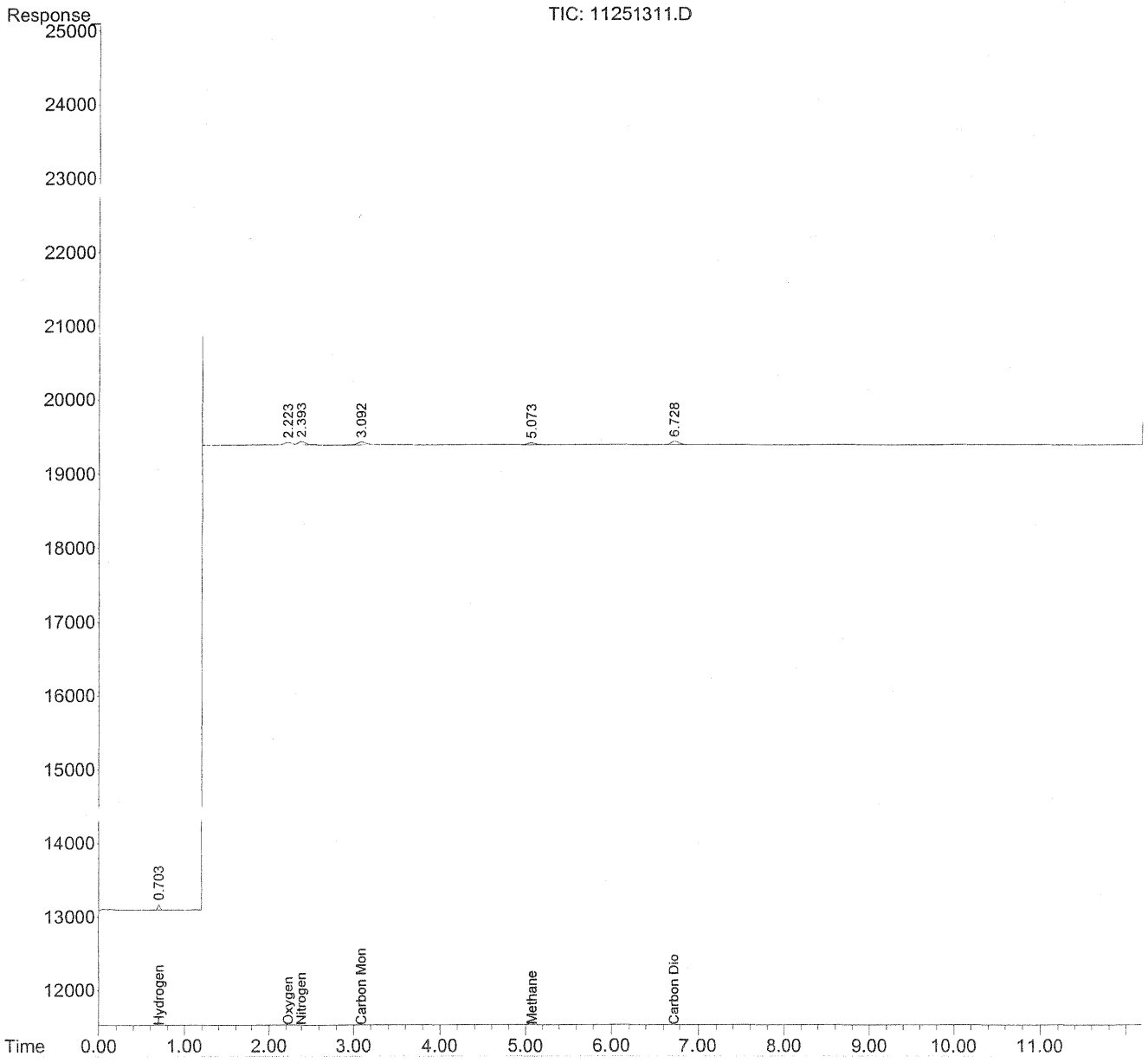
(+) = Expected Retention Time
3C112513.M Tue Nov 26 16:38:39 2013

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251311.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:40 pm
Operator : WH
Sample : STD 1500/1200ppm
Misc : normal loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:42:43 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:42:30 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251311.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 3:40 pm
Operator : WH
Sample : STD 1500/1200ppm
Misc : normal loop of S27-08281302
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:42:43 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:42:30 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.705	1536	923.169	ppm
2)	Oxygen	2.225	1967	827.922	ppm
3)	Nitrogen	2.396	2978	1287.741	ppm
4)	Carbon Monoxide	3.094	2636	1123.507	ppm
5)	Methane	5.074	1722	997.949	ppm
6)	Carbon Dioxide	6.732	3227	1213.129	ppm

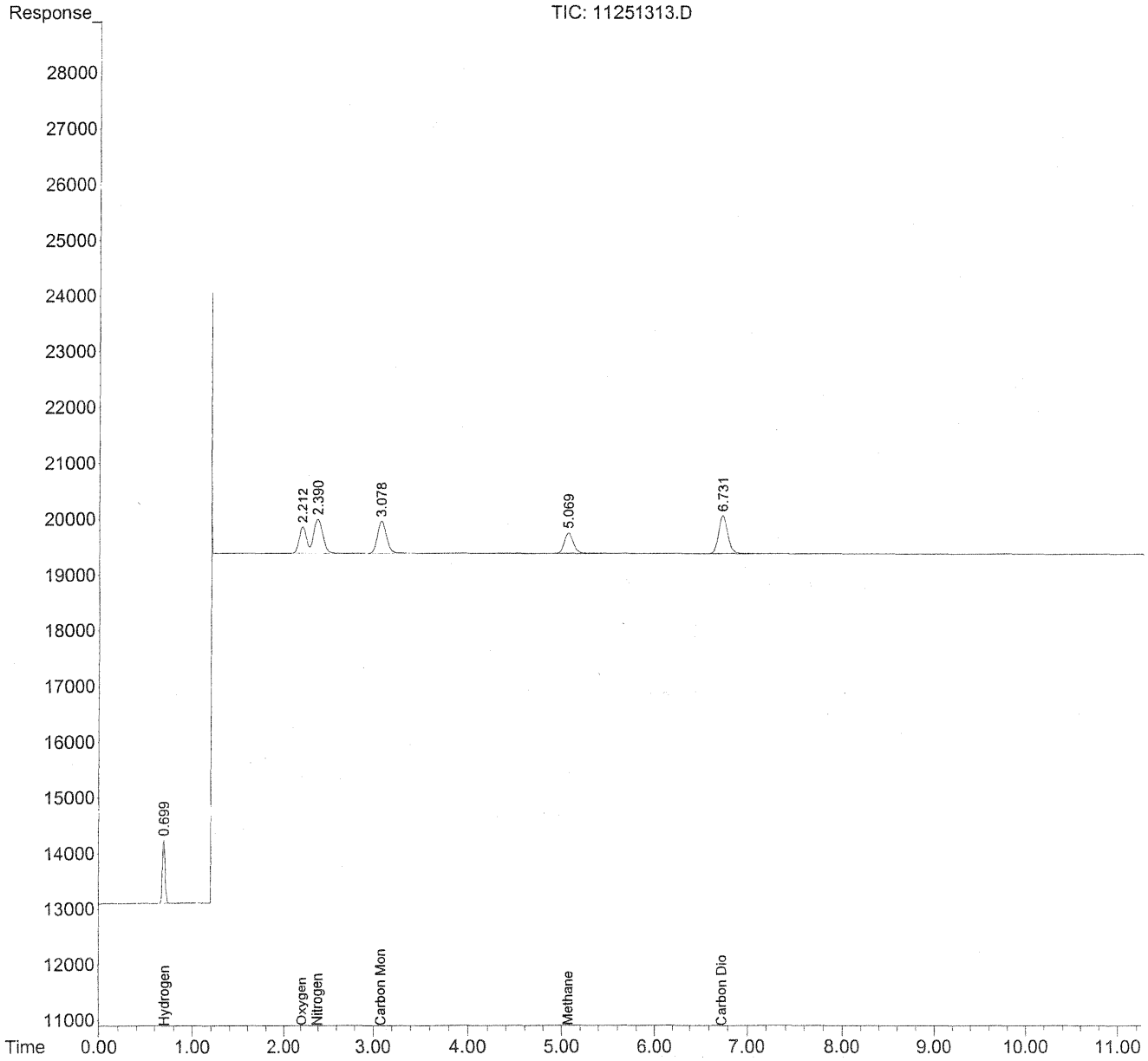
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251313.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 4:49 pm
Operator : WH
Sample : STD 21000/16800ppm
Misc : 0.42 loop of S27-
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:43:32 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:43:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251313.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 4:49 pm
Operator : WH
Sample : STD 21000/16800ppm
Misc : 0.42 loop of S27-
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:43:32 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:43:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.700	22399	20527.669	ppm
2)	Oxygen	2.214	28841	19270.174	ppm
3)	Nitrogen	2.392	40635	25093.986	ppm
4)	Carbon Monoxide	3.080	40508	27348.347	ppm
5)	Methane	5.071	24519	20589.887	ppm
6)	Carbon Dioxide	6.732	46657	25853.793	ppm

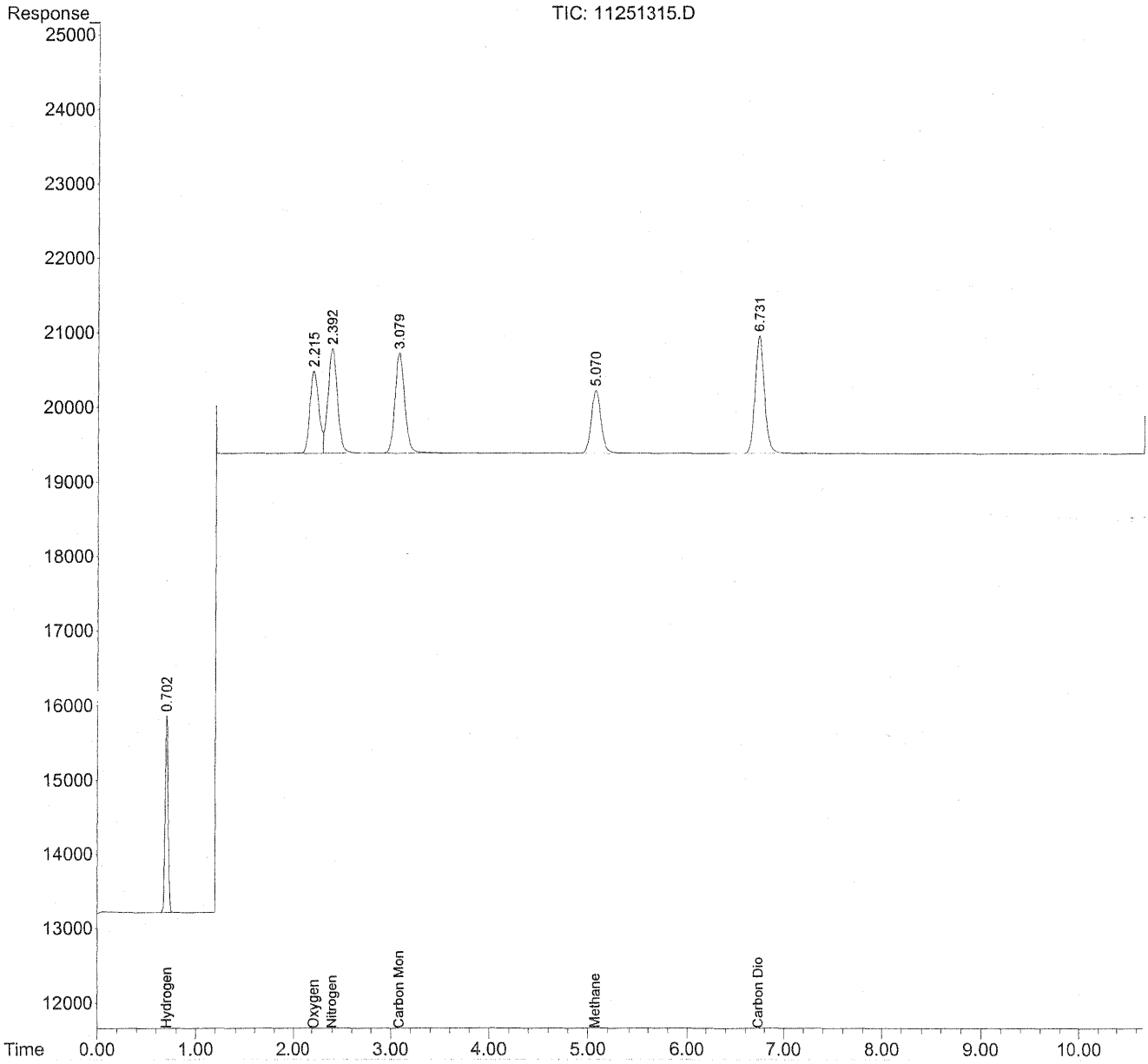
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251315.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 5:39 pm
Operator : WH
Sample : STD 50000/40000ppm
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 15:07:10 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 14:38:50 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251315.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 5:39 pm
Operator : WH
Sample : STD 50000/40000ppm
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 15:07:10 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 14:38:50 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.703	52452	38599.287	ppm
2)	Oxygen	2.216	67056	40656.273	ppm
3)	Nitrogen	2.393	94585	50146.868	ppm
4)	Carbon Monoxide	3.080	94240	52073.231	ppm
5)	Methane	5.072	56661	40554.168	ppm
6)	Carbon Dioxide	6.732	109139	51474.728	ppm

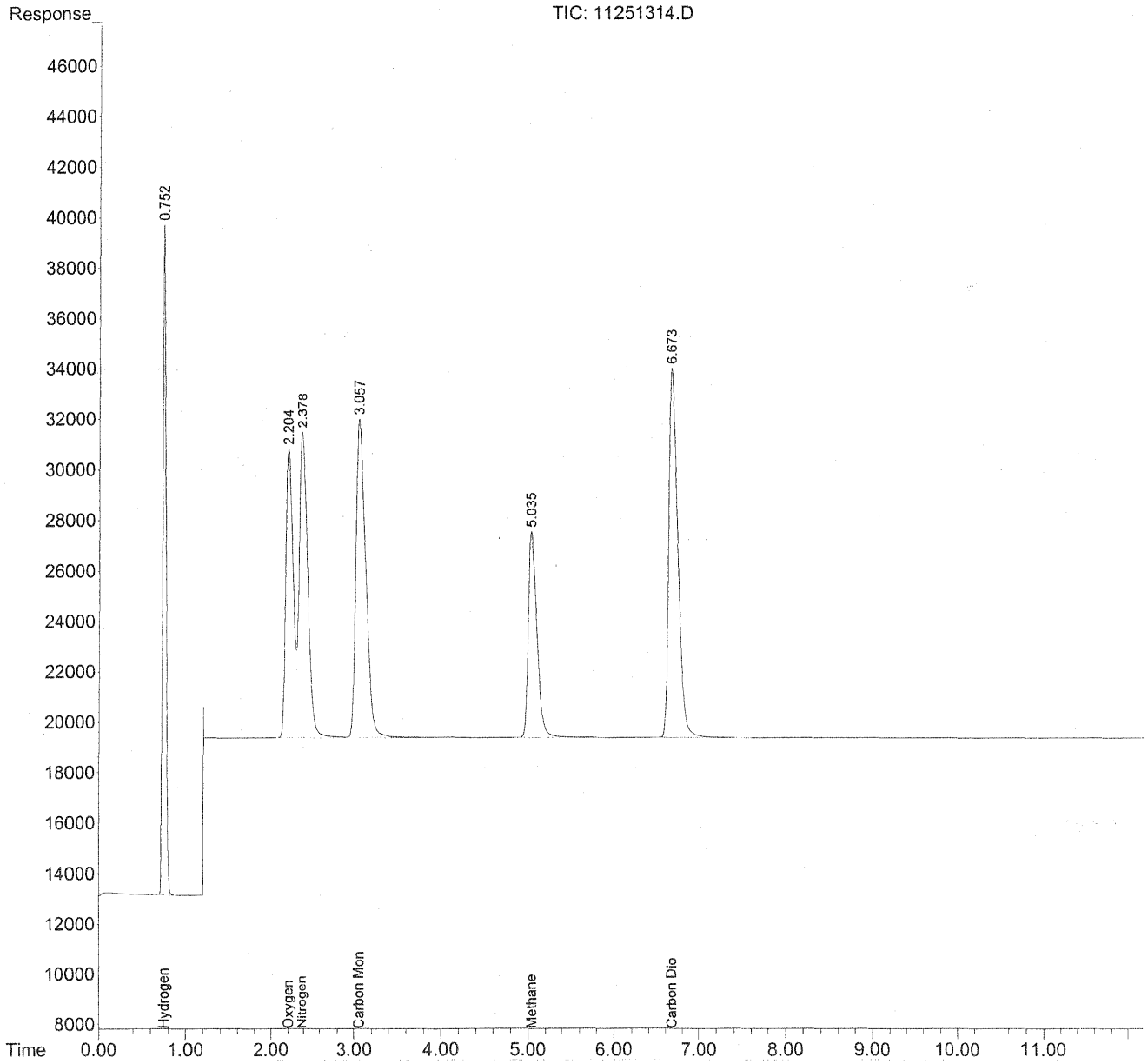
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251314.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 5:09 pm
Operator : WH
Sample : STD 503500/402800ppm
Misc : 10.07 loop of S27-11121303
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:53:56 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:43:47 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\25\
Data File : 11251314.D
Signal(s) : TCD1A.CH
Acq On : 25 Nov 2013 5:09 pm
Operator : WH
Sample : STD 503500/402800ppm
Misc : 10.07 loop of S27-11121303
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 25 17:53:56 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 17:43:47 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.753	642508	505477.433	ppm
2)	Oxygen	2.206	677584	408530.551	ppm
3)	Nitrogen	2.380	977077	533732.614	ppm
4)	Carbon Monoxide	3.058	964675	555337.907	ppm
5)	Methane	5.037	579738	429647.366	ppm
6)	Carbon Dioxide	6.674	1100046	537728.492	ppm

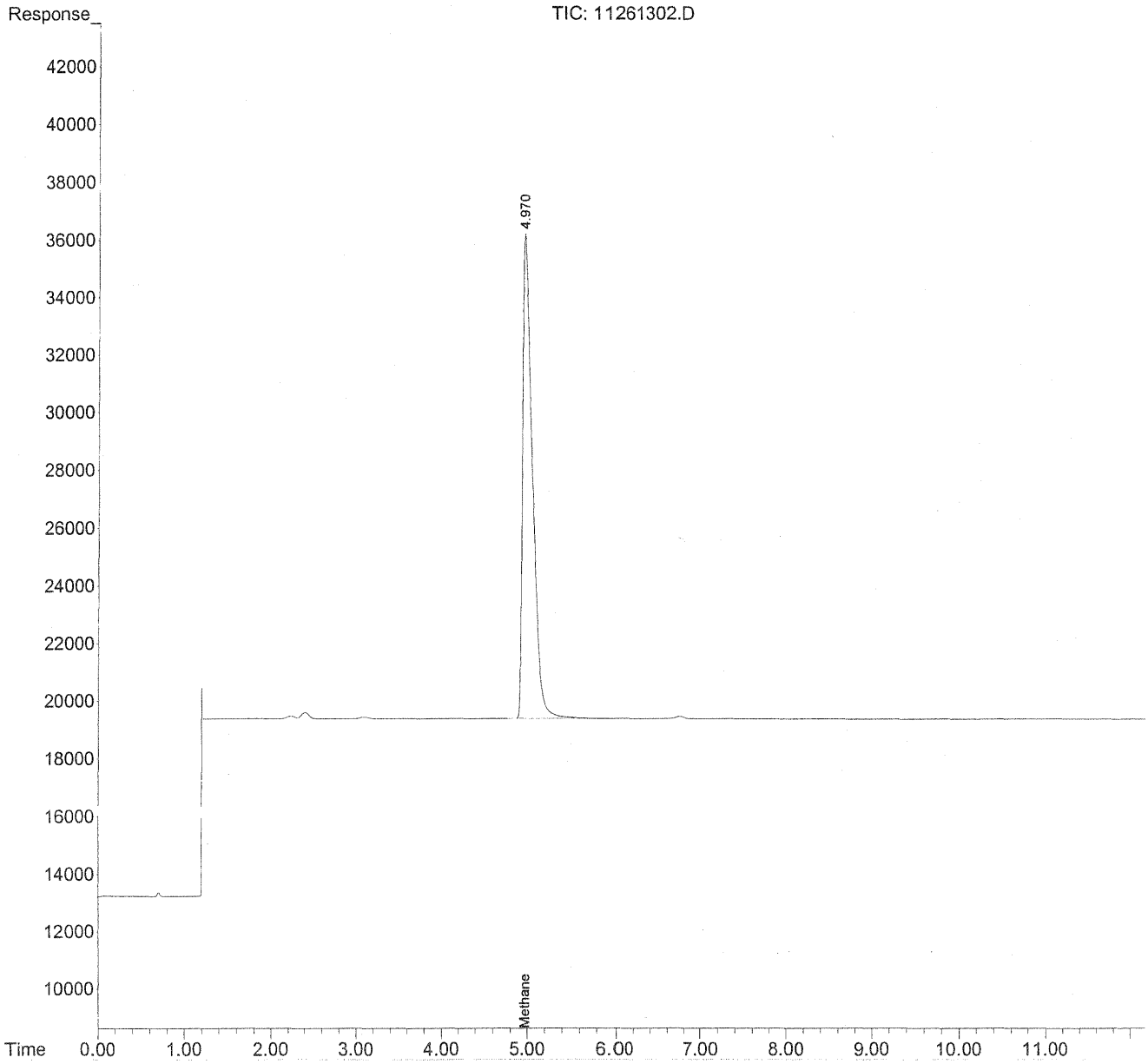
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261302.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 10:41 am
Operator : WH
Sample : CH4 99%
Misc : normal loop of S23-03221103
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 18:15:10 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 18:10:56 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261302.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 10:41 am
Operator : WH
Sample : CH4 99%
Misc : normal loop of S23-03221103
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 18:15:10 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Nov 25 18:10:56 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Hydrogen	0.000	0	N.D.	ppm	d
2)	Oxygen	0.000	0	N.D.	ppm	d
3)	Nitrogen	0.000	0	N.D.	ppm	d
4)	Carbon Monoxide	0.000	0	N.D.	ppm	d
5)	Methane	4.972	1346210	965995.076	ppm	
6)	Carbon Dioxide	0.000	0	N.D.	ppm	d

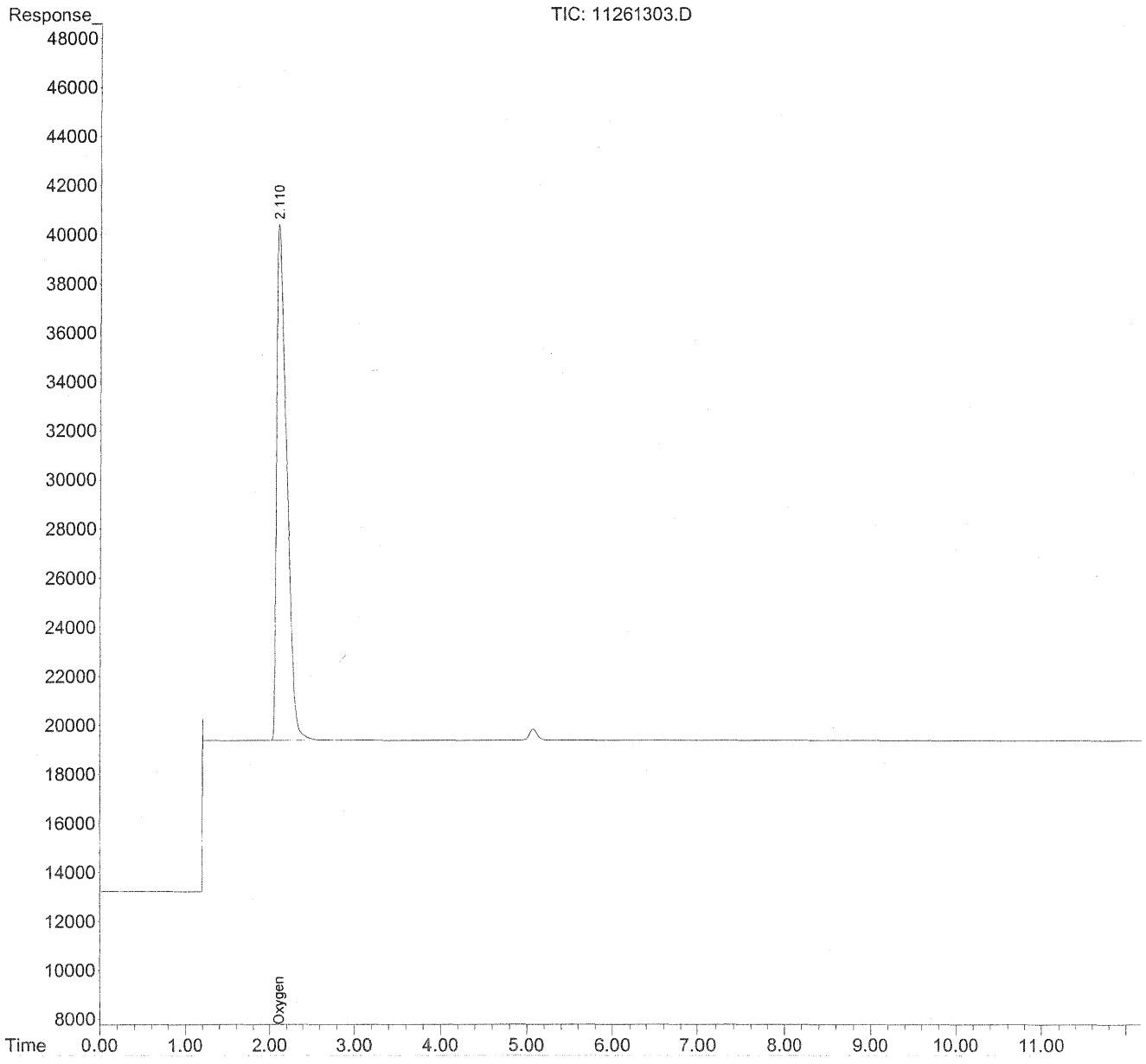
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261303.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 11:20 am
Operator : WH
Sample : O2 99.999%
Misc : normal loop of S27-08221303
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 11:46:50 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 11:23:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261303.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 11:20 am
Operator : WH
Sample : O2 99.999%
Misc : normal loop of S27-08221303
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 11:46:50 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 11:23:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Hydrogen	0.000	0	N.D.	ppm	
2)	Oxygen	2.112	1663932	1012751.257	ppm	
3)	Nitrogen	0.000	0	N.D.	ppm	
4)	Carbon Monoxide	0.000	0	N.D.	ppm	
5)	Methane	0.000	0	N.D.	ppm	d
6)	Carbon Dioxide	0.000	0	N.D.	ppm	

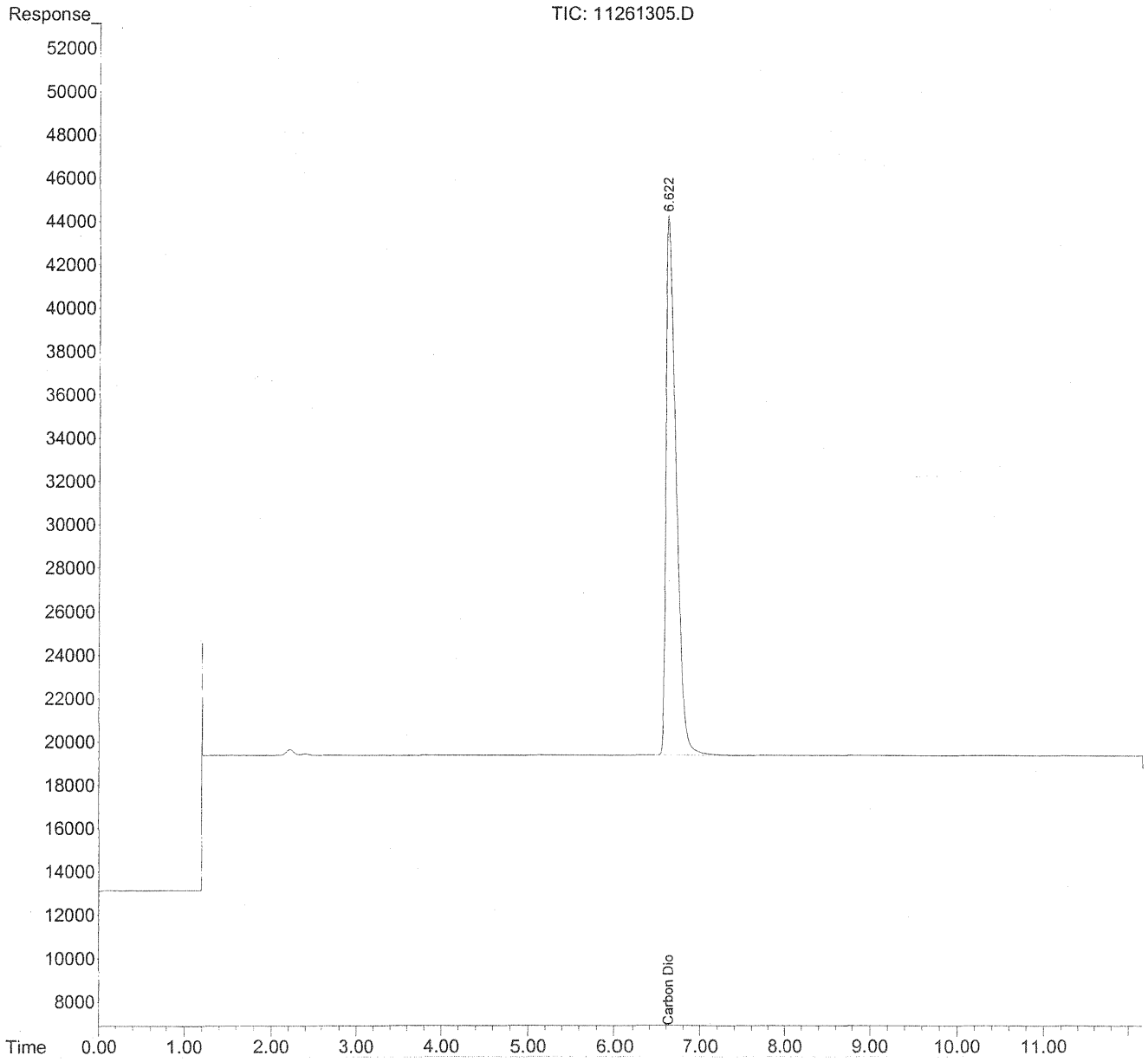
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261305.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 11:57 am
Operator : WH
Sample : CO2 99.8%
Misc : normal loop of S23-03221108
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 12:48:04 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 11:47:26 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261305.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 11:57 am
Operator : WH
Sample : CO2 99.8%
Misc : normal loop of S23-03221108
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 12:48:04 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 11:47:26 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Hydrogen	0.000	0	N.D.	ppm	
2)	Oxygen	0.000	0	N.D.	ppm	d
3)	Nitrogen	0.000	0	N.D.	ppm	d
4)	Carbon Monoxide	0.000	0	N.D.	ppm	
5)	Methane	0.000	0	N.D.	ppm	d
6)	Carbon Dioxide	6.623	2066307	975908.480	ppm	

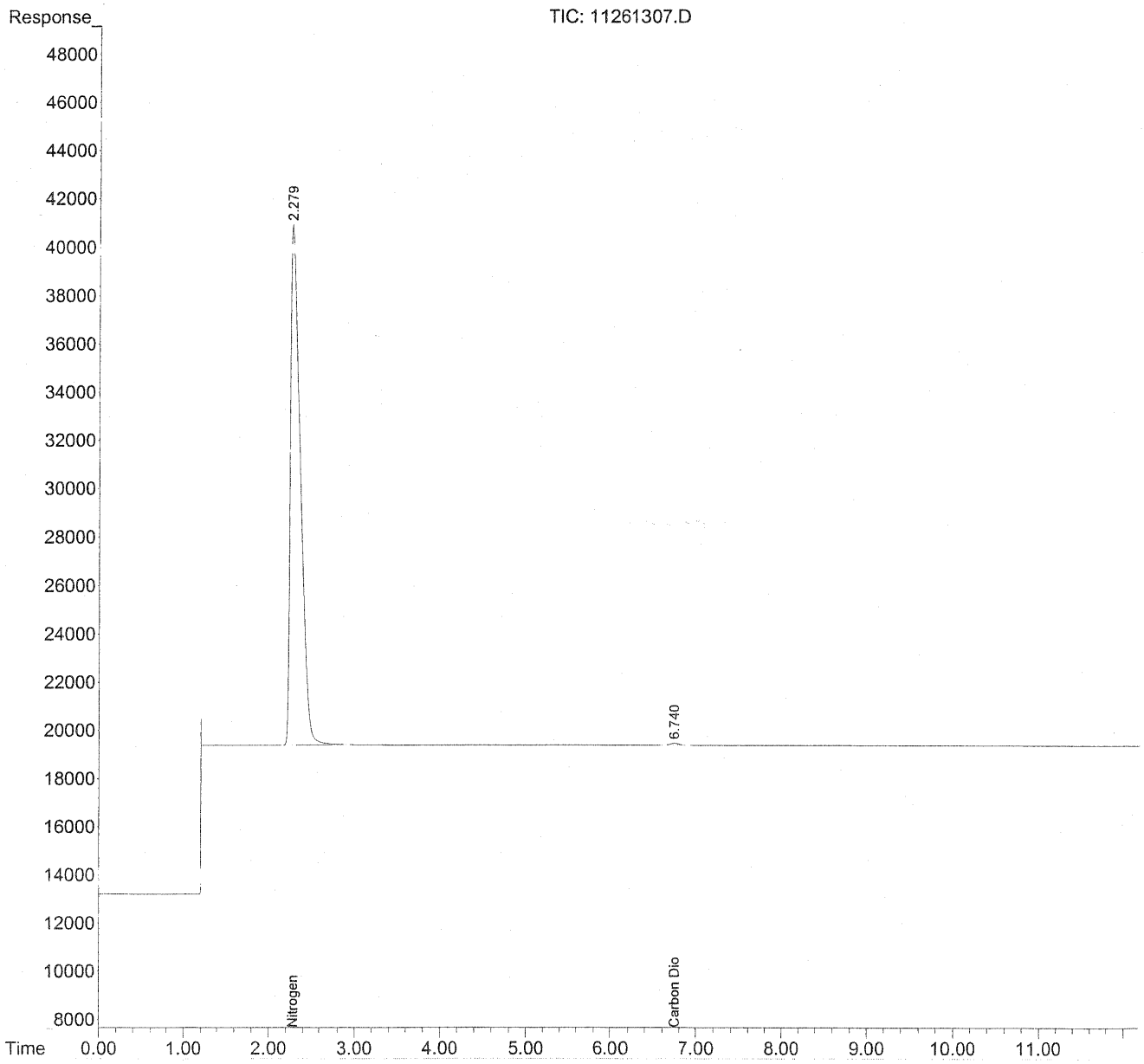
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261307.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 1:37 pm
Operator : WH
Sample : N2 99.999%
Misc : normal loop of S27-08221304
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 14:38:11 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 12:48:54 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261307.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 1:37 pm
Operator : WH
Sample : N2 99.999%
Misc : normal loop of S27-08221304
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 14:38:11 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 12:48:54 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Hydrogen	0.000	0	N.D.	ppm	
2)	Oxygen	0.000	0	N.D.	ppm	d
3)	Nitrogen	2.280	1778617	942902.552	ppm	
4)	Carbon Monoxide	0.000	0	N.D.	ppm	
5)	Methane	0.000	0	N.D.	ppm	
6)	Carbon Dioxide	6.742	5593	2637.930	ppm	

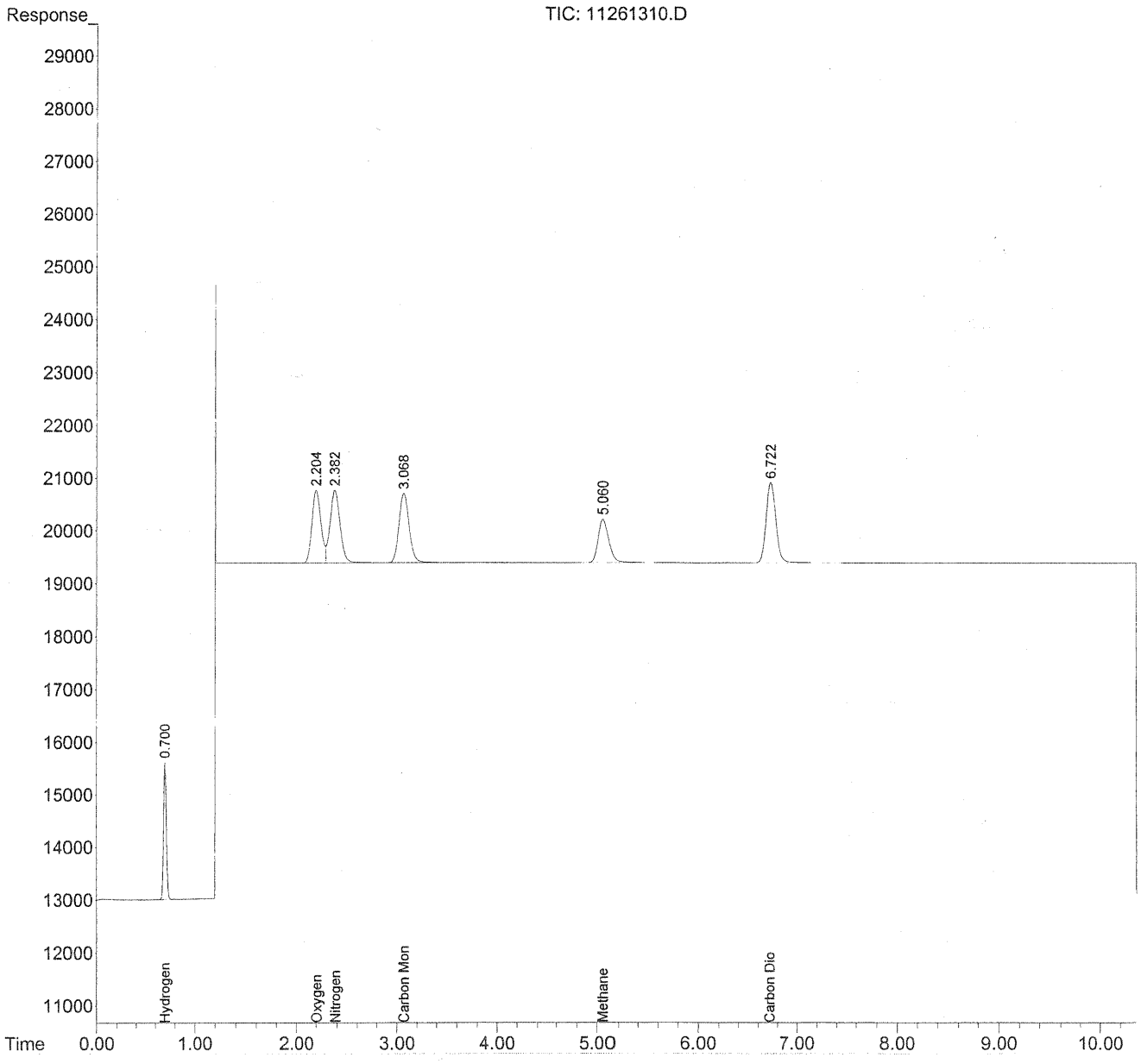
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261310.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 3:35 pm
Operator : WH
Sample : ICV S27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 16:03:37 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 15:07:44 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_11\26\
Data File : 11261310.D
Signal(s) : TCD1A.CH
Acq On : 26 Nov 2013 3:35 pm
Operator : WH
Sample : ICV S27-04301304
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Nov 26 16:03:37 2013
Quant Method : J:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Tue Nov 26 15:07:44 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	Actual	R.T.	Response	Conc	Units	% recovery
Target Compounds							
1)	Hydrogen	39500	0.701	51157	37646.283	ppm	95.3
2)	Oxygen	50000	2.206	84115	50999.704	ppm	102.0
3)	Nitrogen	49400	2.383	93656	49654.492	ppm	100.5
4)	Carbon Monoxide	49400	3.070	92301	51001.830	ppm	103.24
5)	Methane	39500	5.061	55337	39607.145	ppm	100.3
6)	Carbon Dioxide	49300	6.723	106130	50055.682	ppm	101.5

(f)=RT Delta > 1/2 Window (m)=manual int.

WH 11/26/13

Modified EPA Method 3C Daily QC Summary

Client : Trevet
Analyst : NL
Method Name : EPA 3C GC/TCD Analysis for Fixed Gases

Instrument : GC01
Date Analyzed : 12/30/2013

RT Summaries and QC Check (minutes)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ICAL Mean RT	**0.708**	**2.188**	**2.368**	**3.076**	**5.045**	**6.707**		
RT Windows (+/- min)	**0.072**	**0.133**	**0.146**	**0.034**	**0.130**	**0.145**		
STD S27-11121303	0.708	2.229	2.406	3.094	5.085	6.745	12301301.D	07:56
+/- 0.33min of ICAL Mean RT	Pass	Pass	Pass	Pass	Pass	Pass		
mb							12301302.D	08:17
lab air		2.170 Pass	2.307 Pass			6.743 Pass	12301303.D	08:36
lcs s27-04301304	0.707 Pass	2.224 Pass	2.402 Pass	3.091 Pass	5.082 Pass	6.742 Pass	12301304.D	09:03
lcsd s27-04301304	0.706 Pass	2.220 Pass	2.398 Pass	3.086 Pass	5.077 Pass	6.738 Pass	12301305.D	09:21
5675-001		2.166 Pass	2.282 Pass			6.748 Pass	12301315.D	12:52
std s27-11121303	0.708 Pass	2.227 Pass	2.404 Pass	3.091 Pass	5.082 Pass	6.743 Pass	12301316.D	13:11
5675-004		2.165 Pass	2.283 Pass			6.748 Pass	12301317.D	13:44
5675-005		2.151 Pass	2.268 Pass			6.751 Pass	12301318.D	14:03
5675-006		2.154 Pass	2.271 Pass			6.745 Pass	12301319.D	14:20
std s27-11121303	0.707 Pass	2.223 Pass	2.400 Pass	3.086 Pass	5.078 Pass	6.739 Pass	12301326.D	16:35

Continuing Calibration Standards Summary (ppm)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ACTUAL	39990.0	40030.0	50000.0	50010.0	39970.0	50040.0		
CCV Criteria (+/- %D)	**15.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**		
STD S27-11121303	38331.9 Pass	42170.7 Pass	54367.3 Pass	52148.7 Pass	40676.8 Pass	51454.2 Pass	12301301.D	07:56
std s27-11121303	39801.1 Pass	42349.0 Pass	52060.0 Pass	53497.4 Pass	41917.2 Pass	52905.8 Pass	12301316.D	13:11
std s27-11121303	39246.1 Pass	41369.7 Pass	51166.7 Pass	52641.5 Pass	40954.8 Pass	52139.1 Pass	12301326.D	16:35

Lab Dup Summary (ppm, without DF correction and nomalization)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time

LCS / LCS Dup Summary (ppm, without DF correction)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
LCS Actual Conc. (ppm)	39500.0	50000.0	49400.0	49400.0	39500.0	49300.0		
LCS Criteria (% Range)	**84%-110%**	**88%-114%**	**88%-114%**	**88%-113%**	**87%-110%**	**84%-109%**		
lcs s27-04301304	36727.9	51432.8	52575.6	50280.2	39087.9	49181.1	12301304.D	09:03
LCS % Recovery	93% Pass	103% Pass	106% Pass	102% Pass	99% Pass	100% Pass		
lcsd s27-04301304	36495.4	50813.5	50888.2	49836.8	38878.7	48872.6	12301305.D	09:21
LCS % Recovery	92% Pass	102% Pass	103% Pass	101% Pass	98% Pass	99% Pass		
Duplicate % RPD	0.6%	1.2%	3.3%	0.9%	0.5%	0.6%		
Duplicate Criteria % RPD	**10%** Pass	**9%** Pass	**10%** Pass	**9%** Pass	**9%** Pass	**9%** Pass		

Lab Air QC Summary

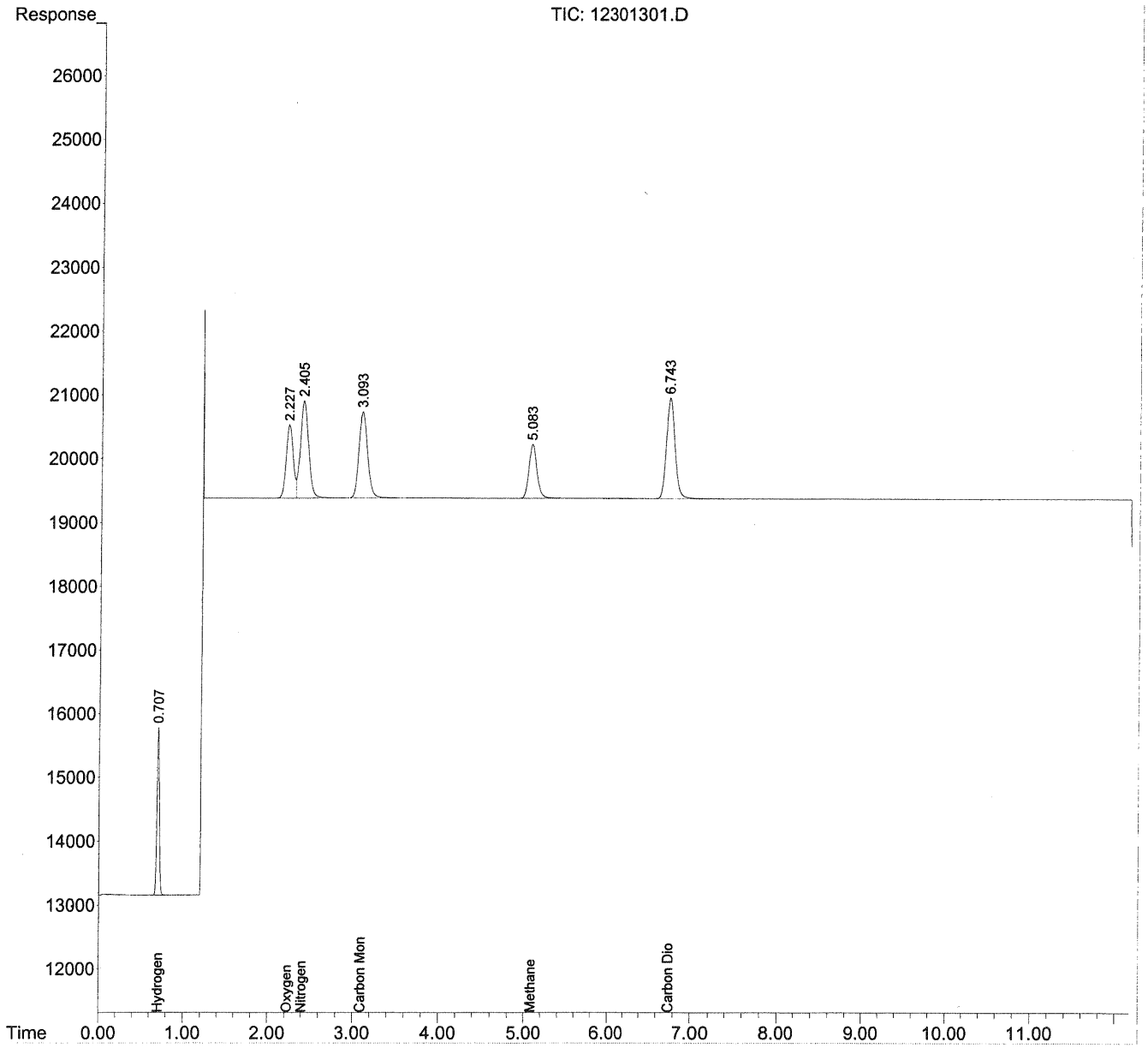
Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxid	Methane	Carbon Dioxide	Lab Air Criteria Total (90%-110%)
lab air		213842.7	765075.7			403.9	97.9% Pass
Lab Air Normalized (%)		21.83%	78.12%			0.04%	100.0%

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301301.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 7:56 am
Operator : NL
Sample : STD S27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:11:52 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301301.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 7:56 am
Operator : NL
Sample : STD S27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:11:52 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

WH 1/2/14

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.708	52088	38331.938	ppm
2)	Oxygen	2.229	69553	42170.742	ppm
3)	Nitrogen	2.406	102545	54367.321	ppm
4)	Carbon Monoxide	3.094	94377	52148.745	ppm
5)	Methane	5.085	56832	40676.834	ppm
6)	Carbon Dioxide	6.745	109095	51454.178	ppm

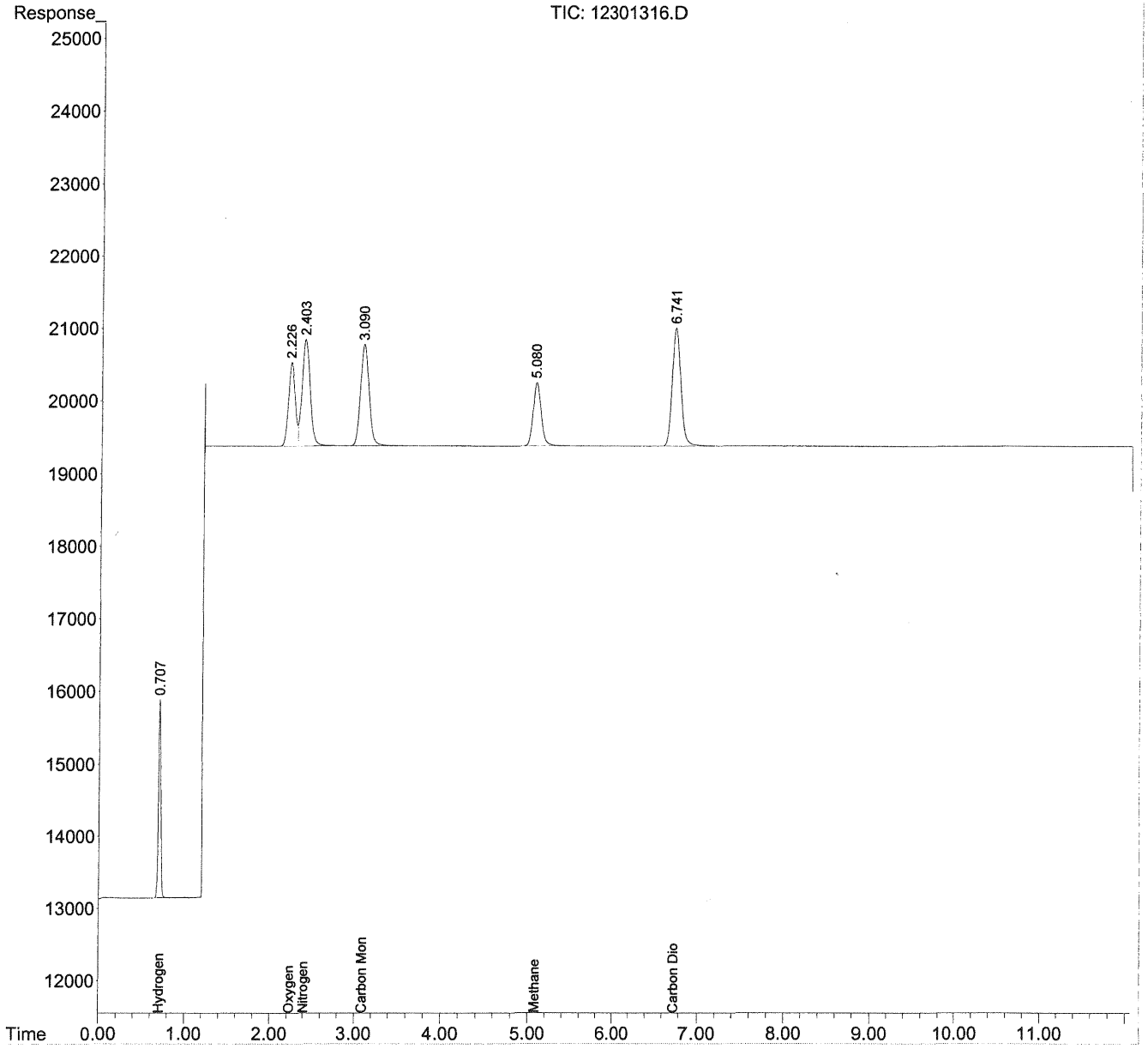
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301316.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 1:11 pm
Operator : NL
Sample : std s27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:54 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301316.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 1:11 pm
Operator : NL
Sample : std s27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Dec 30 18:12:54 2013
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.708	54085	39801.052	ppm
2)	Oxygen	2.227	69847	42348.954	ppm
3)	Nitrogen	2.404	98193	52060.008	ppm
4)	Carbon Monoxide	3.091	96817	53497.363	ppm
5)	Methane	5.082	58565	41917.202	ppm
6)	Carbon Dioxide	6.743	112173	52905.752	ppm

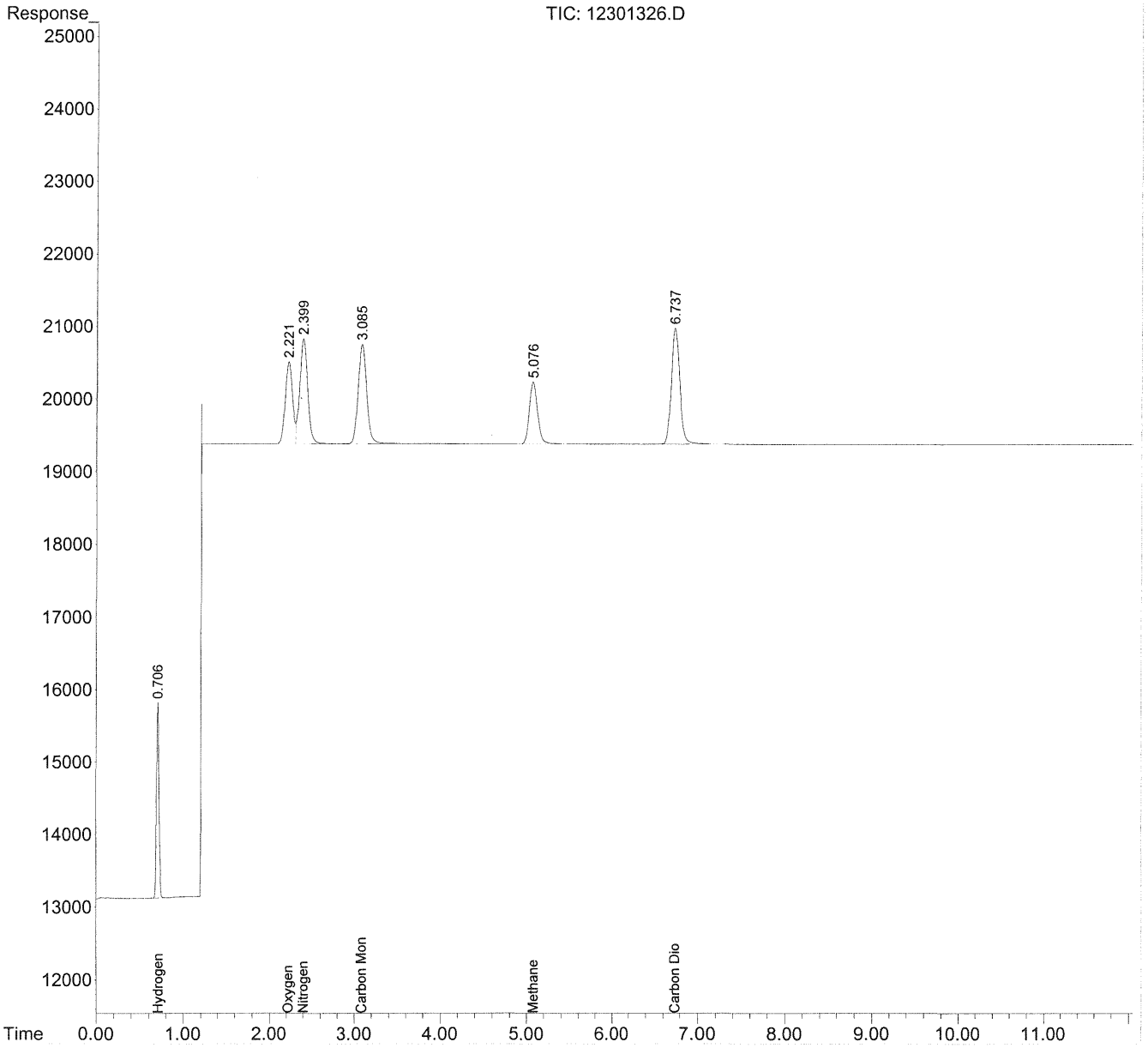
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301326.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 4:35 pm
Operator : NL
Sample : std s27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:33:40 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC01\DATA\FXG\2013_12\30\
Data File : 12301326.D
Signal(s) : TCD1A.CH
Acq On : 30 Dec 2013 4:35 pm
Operator : NL
Sample : std s27-11121303
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 02 19:33:40 2014
Quant Method : I:\GC01\METHODS\3C112513.M
Quant Title : EPA 3C GC/TCD Analysis for Fixed Gases
QLast Update : Mon Dec 09 13:50:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Hydrogen	0.707	53331	39246.076	ppm
2)	Oxygen	2.223	68232	41369.694	ppm
3)	Nitrogen	2.400	96509	51166.728	ppm
4)	Carbon Monoxide	3.086	95268	52641.450	ppm
5)	Methane	5.078	57220	40954.787	ppm
6)	Carbon Dioxide	6.739	110547	52139.108	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Injection Log

Directory: J:\GC01\DATA\FXG\2013_11\25

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	11251301.d	10.	STD S27-11121303		25 Nov 2013 08:47
2	1	11251302.d	10.	STD S27-11121303		25 Nov 2013 09:14
3	1	11251304.d	10.	S27-08221310 1500/2000		25 Nov 2013 10:08
4	1	11251305.d	10.	S27-08221310 1500/2000		25 Nov 2013 10:26
5	1	11251306.d	10.	Blank		25 Nov 2013 12:38
6	1	11251307.d	10.	STD S27-08221310	0.4202 loop	25 Nov 2013 13:11
7	1	11251308.d	10.	STD S27-08221310	STD loop	25 Nov 2013 14:21
8	1	11251309.d	10.	STD3		25 Nov 2013 14:46
9	1	11251310.d	10.	STD 630/504ppm	0.42 loop of S27-...	25 Nov 2013 15:19
10	1	11251311.d	10.	STD 1500/1200ppm	normal loop of S2...	25 Nov 2013 15:40
11	1	11251312.d	10.	x		25 Nov 2013 16:30
12	1	11251313.d	10.	STD 21000/16800ppm	0.42 loop of S27-...	25 Nov 2013 16:49
13	1	11251314.d	10.	STD 503500/402800ppm	10.07 loop of S2...	25 Nov 2013 17:09
14	1	11251315.d	10.	STD 50000/40000ppm	normal loop of S...	25 Nov 2013 17:39

Injection Log

Directory: J:\GC01\DATA\FXG\2013_11\26

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	11261301.d	10.	mb		26 Nov 2013 10:20
2	1	11261302.d	10.	CH4 99%	normal loop of S2...	26 Nov 2013 10:41
3	1	11261303.d	10.	O2 99.999%	normal loop of S2...	26 Nov 2013 11:20
4	1	11261304.d	10.	xCO2		26 Nov 2013 11:42
5	1	11261305.d	10.	CO2 99.8%	normal loop of S2...	26 Nov 2013 11:57
6	1	11261306.d	10.	xN2		26 Nov 2013 12:54
7	1	11261307.d	10.	N2 99.999%	normal loop of S2...	26 Nov 2013 13:37
8	1	11261308.d	10.	lab air		26 Nov 2013 14:30
9	1	11261309.d	10.	icv		26 Nov 2013 15:18
10	1	11261310.d	10.	ICV S27-04301304		26 Nov 2013 15:35
11	1	11261311.d	10.	mb		26 Nov 2013 15:58

Injection Log

Directory: J:\GC01\DATA\FXG\2013_12\30

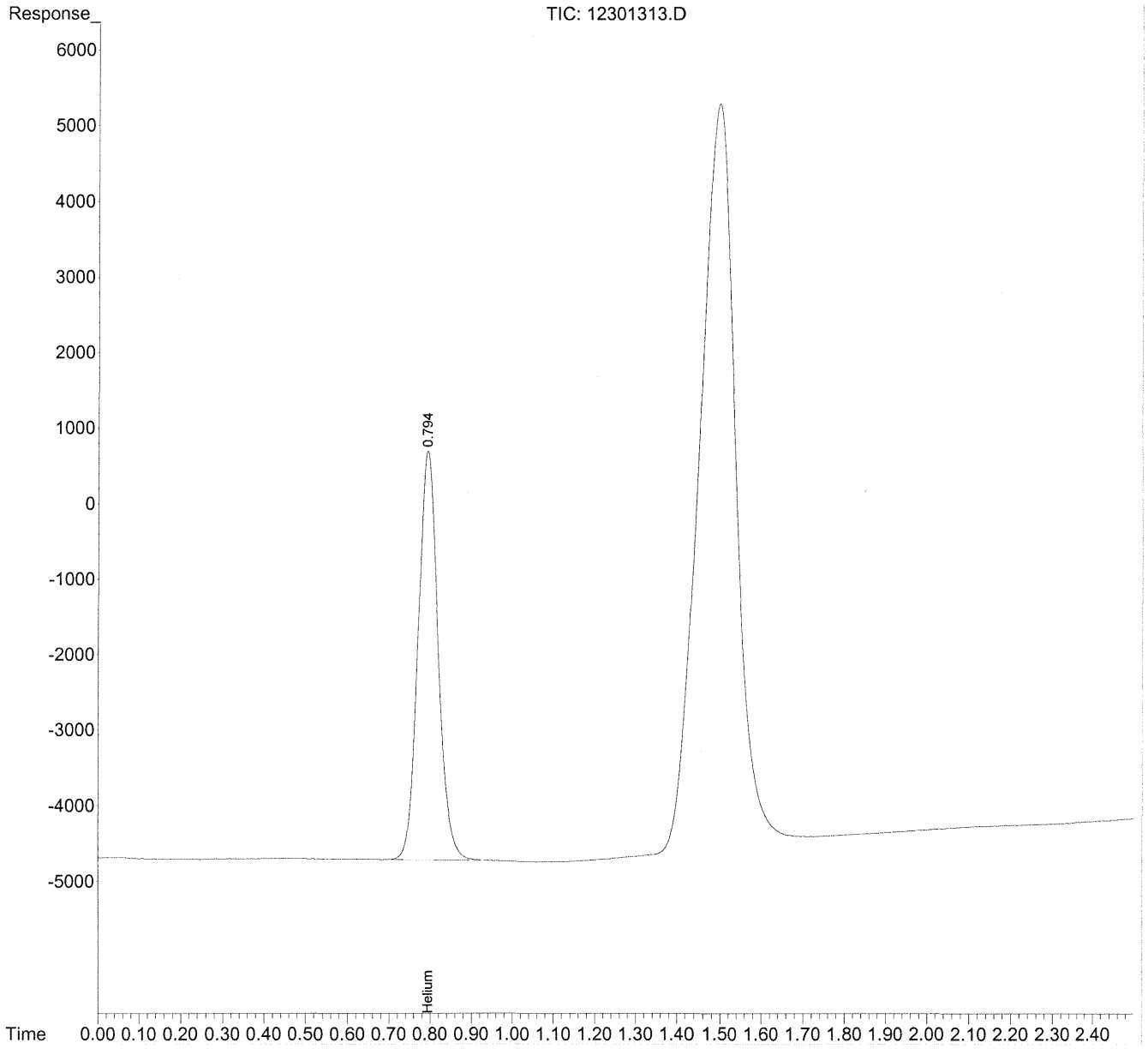
Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	12301301.d	10.	STD S27-11121303		30 Dec 2013 07:56
2	1	12301302.d	10.	mb		30 Dec 2013 08:17
3	1	12301303.d	10.	lab air		30 Dec 2013 08:36
4	1	12301304.d	10.	lcs s27-04301304		30 Dec 2013 09:03
5	1	12301305.d	10.	lcsd s27-04301304		30 Dec 2013 09:21
6	1	12301306.d	10.	5655-001		30 Dec 2013 09:59
7	1	12301307.d	10.	5742-001		30 Dec 2013 10:16
8	1	12301308.d	10.	5689-001		30 Dec 2013 10:34
9	1	12301309.d	10.	5689-002		30 Dec 2013 10:58
10	1	12301310.d	10.	5689-003		30 Dec 2013 11:15
11	1	12301311.d	10.	5689-004		30 Dec 2013 11:38
12	1	12301312.d	10.	5689-005		30 Dec 2013 11:56
13	1	12301313.d	10.	5689-006		30 Dec 2013 12:16
14	1	12301314.d	10.	5689-007		30 Dec 2013 12:34
15	1	12301315.d	10.	5675-001		30 Dec 2013 12:52
16	1	12301316.d	10.	std s27-11121303		30 Dec 2013 13:11
17	1	12301317.d	10.	5675-004		30 Dec 2013 13:44
18	1	12301318.d	10.	5675-005		30 Dec 2013 14:03
19	1	12301319.d	10.	5675-006		30 Dec 2013 14:20
20	1	12301320.d	10.	5673-001		30 Dec 2013 14:39
21	1	12301321.d	10.	5673-002		30 Dec 2013 14:58
22	1	12301322.d	10.	5673-003		30 Dec 2013 15:16
23	1	12301323.d	10.	5673-004		30 Dec 2013 15:39
24	1	12301324.d	10.	5673-005		30 Dec 2013 15:58
25	1	12301325.d	10.	5673-006		30 Dec 2013 16:15
26	1	12301326.d	10.	std s27-11121303		30 Dec 2013 16:35
27	1	12301327.d	10.	wait		30 Dec 2013 17:45

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301313.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:22:38
Operator : NL
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:22 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301313.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:22:38
Operator : NL
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:22 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.794	183802	1781.791	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

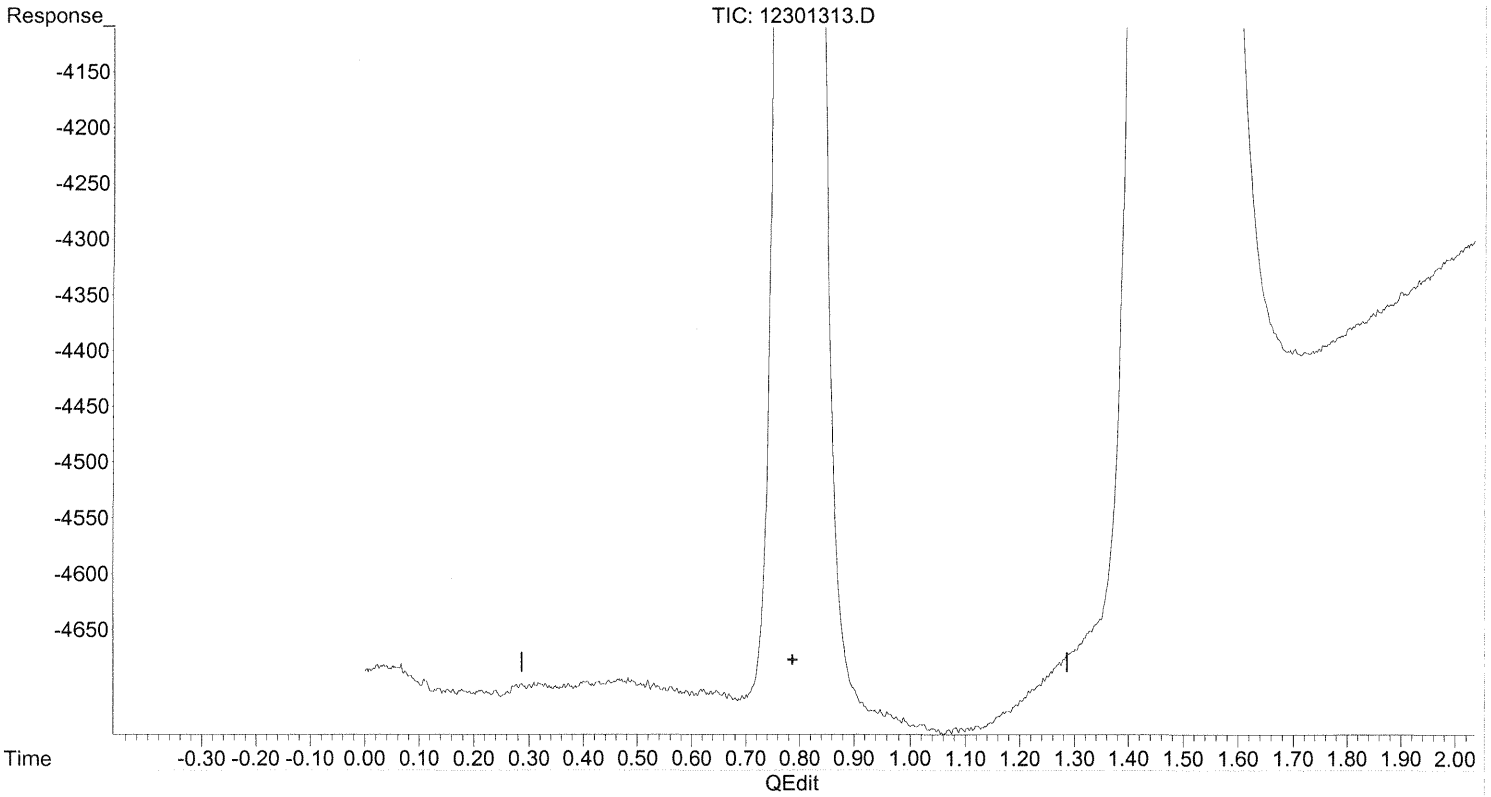
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301313.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:22:38
Operator : NL
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:12 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.786min 0.000 ppm
response 0

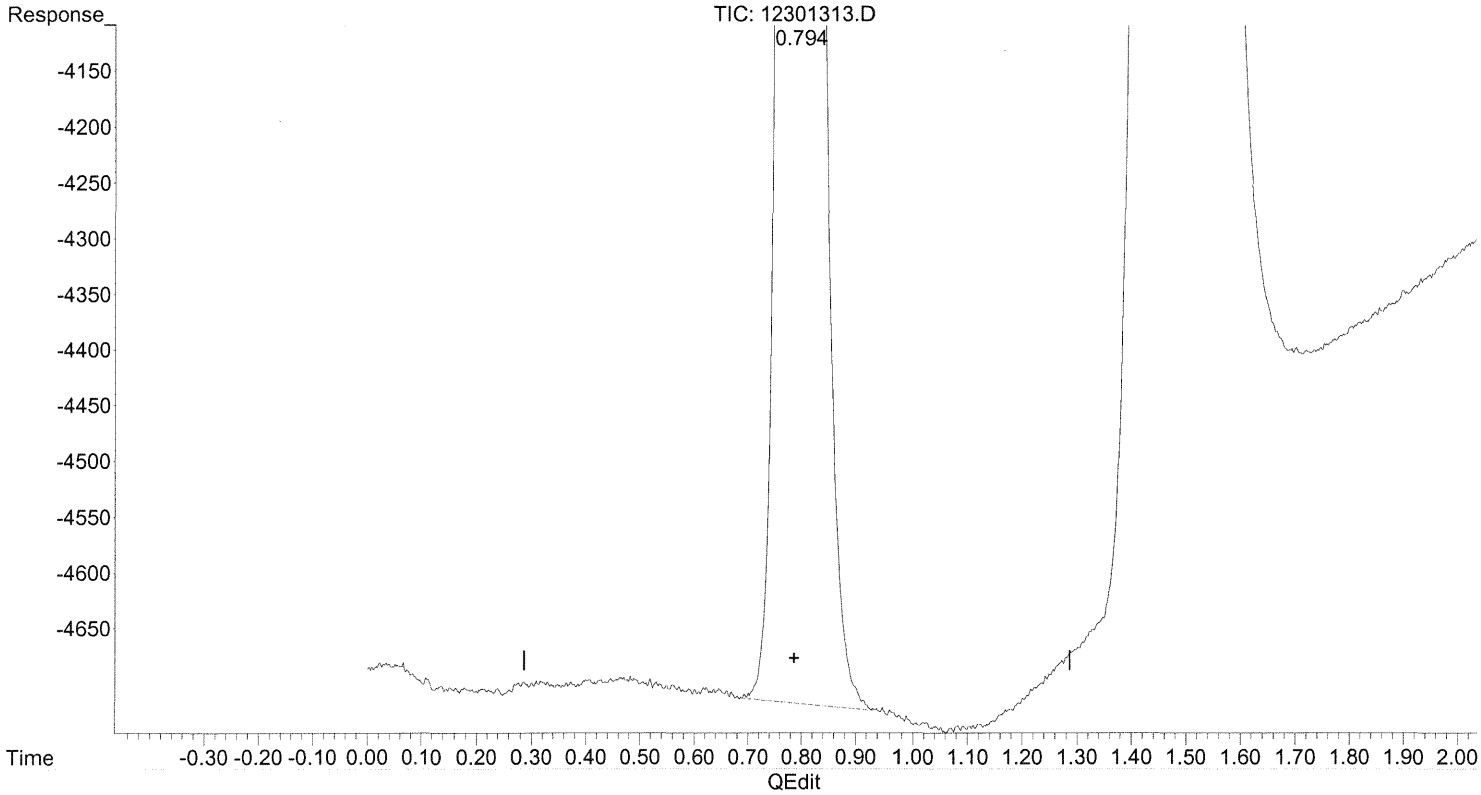
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301313.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:22:38
Operator : NL
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:12 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.794min 1781.791 ppm m
response 183802

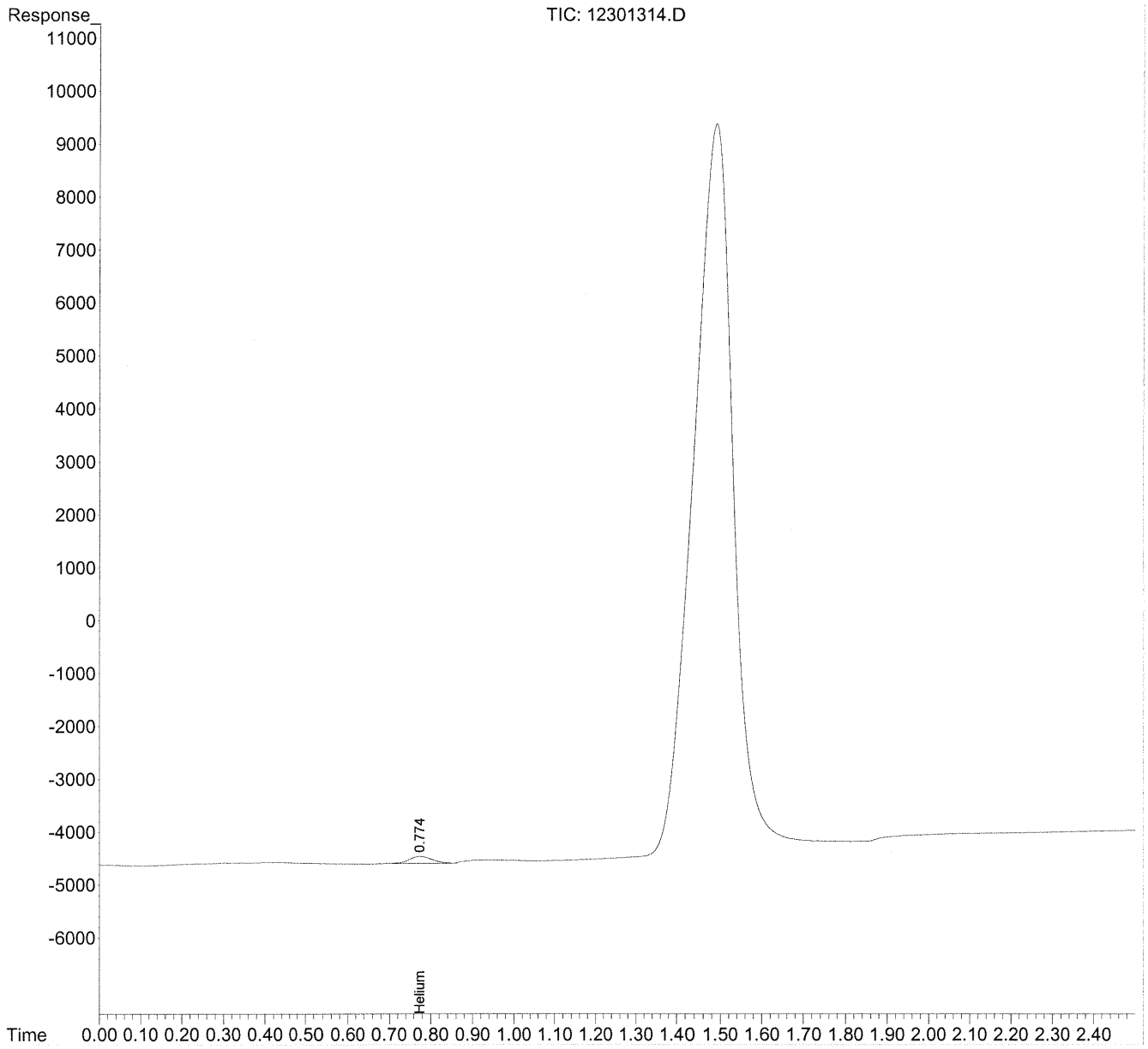
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301314.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:38:32
Operator : NL
Sample : 5675-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:47 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301314.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:38:32
Operator : NL
Sample : 5675-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:47 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.774	5101	49.451	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

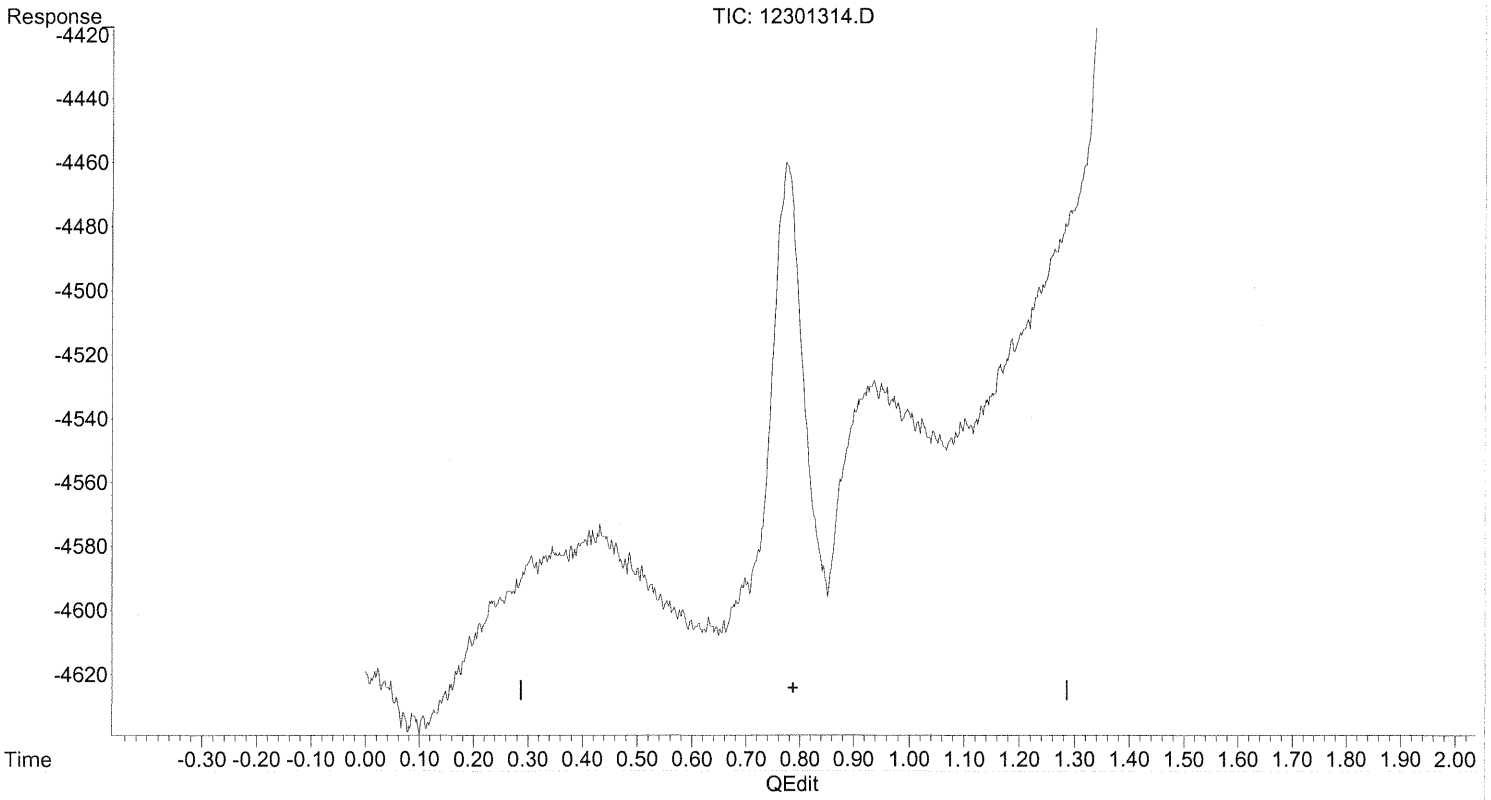
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301314.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:38:32
Operator : NL
Sample : 5675-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:37 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.786min 0.000 ppm
response 0

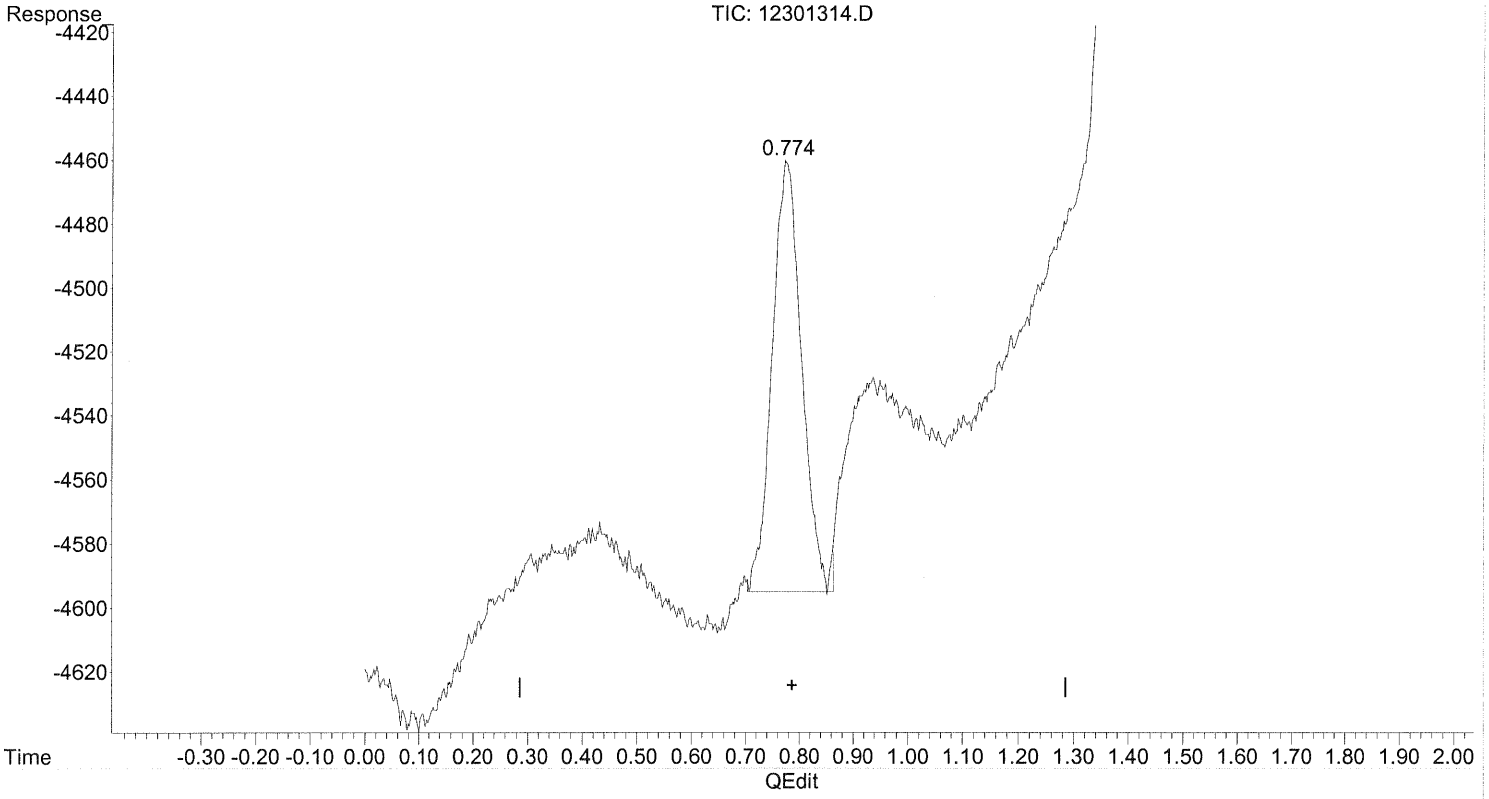
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301314.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:38:32
Operator : NL
Sample : 5675-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:20:37 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.774min 49.451 ppm m
response 5101

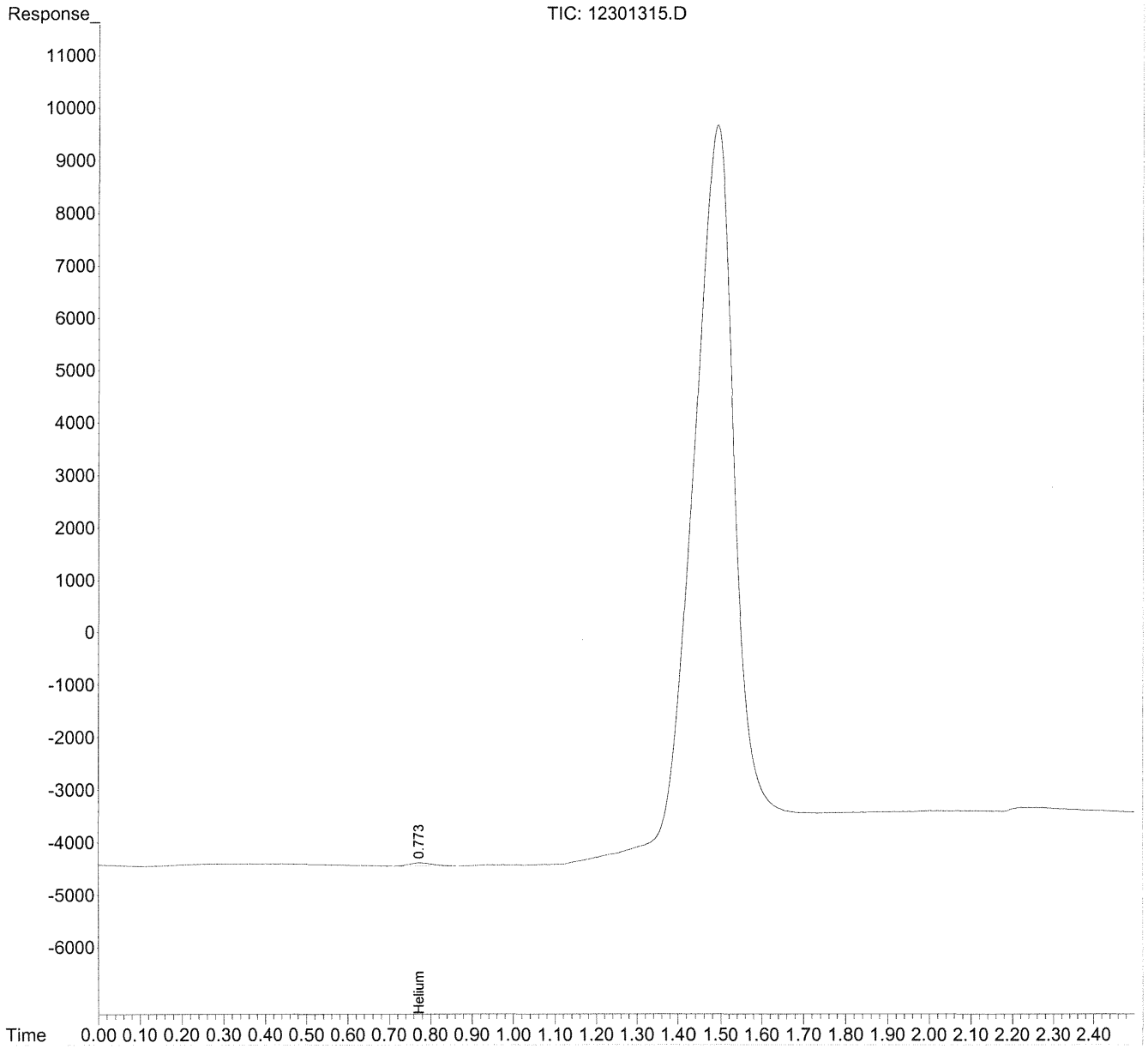
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:01:26
Operator : NL
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:12 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:01:26
Operator : NL
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:12 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.772	2431	23.562	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

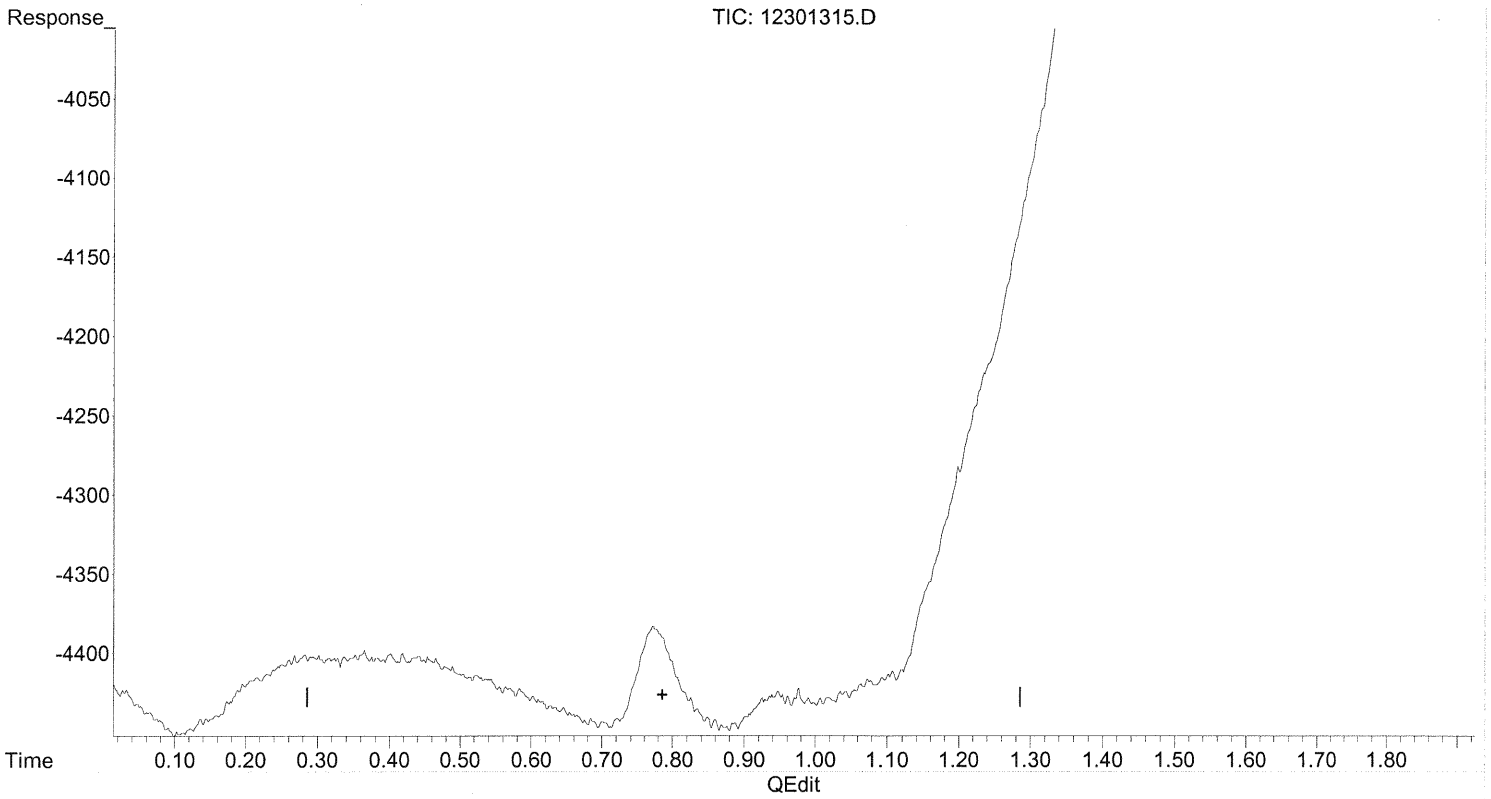
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:01:26
Operator : NL
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:03 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.786min 0.000 ppm
response 0

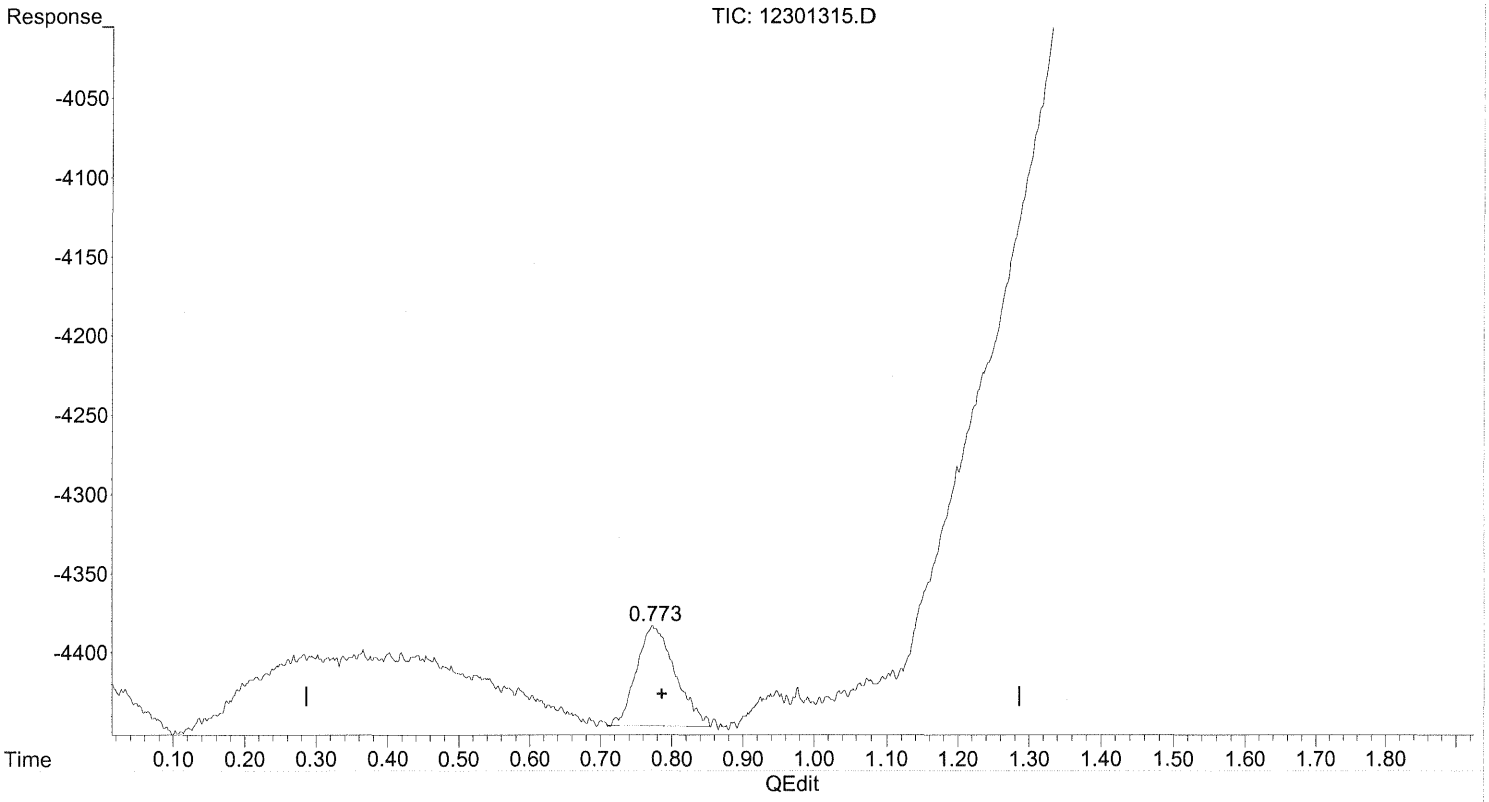
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301315.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:01:26
Operator : NL
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:03 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.772min 23.562 ppm m
response 2431

MP 1/13/14

1/2/14 MP

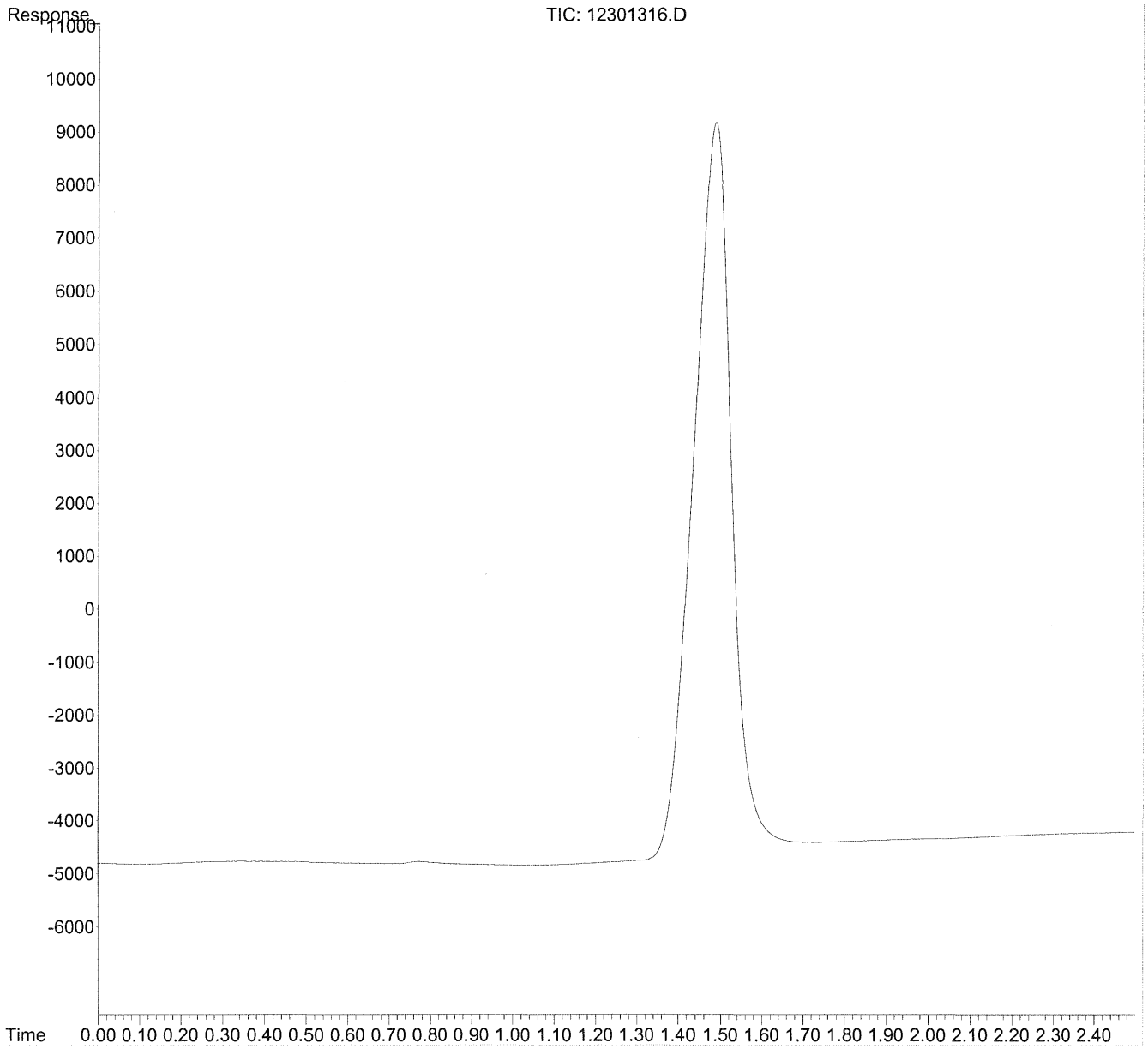
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301316.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:11:06
Operator : NL
Sample : 5675-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:27 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301316.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:11:06
Operator : NL
Sample : 5675-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:27 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Helium	0.000	0	N.D.	ppm
2) Hydrogen	0.000	0	N.D.	ppm

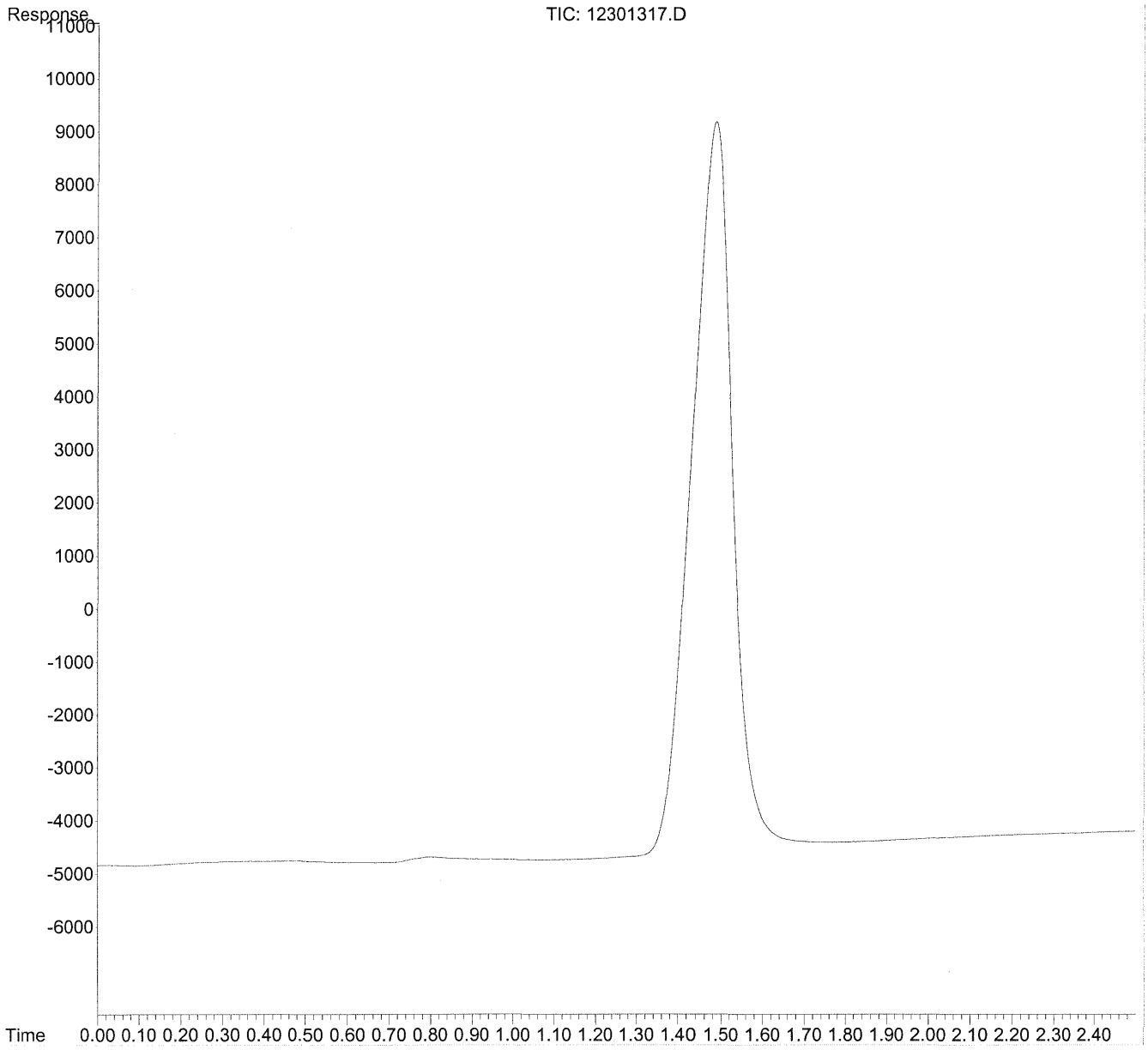
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301317.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:20:22
Operator : NL
Sample : 5675-006 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:43 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301317.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:20:22
Operator : NL
Sample : 5675-006 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:43 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Helium	0.000	0	N.D.	ppm
2)	Hydrogen	0.000	0	N.D.	ppm

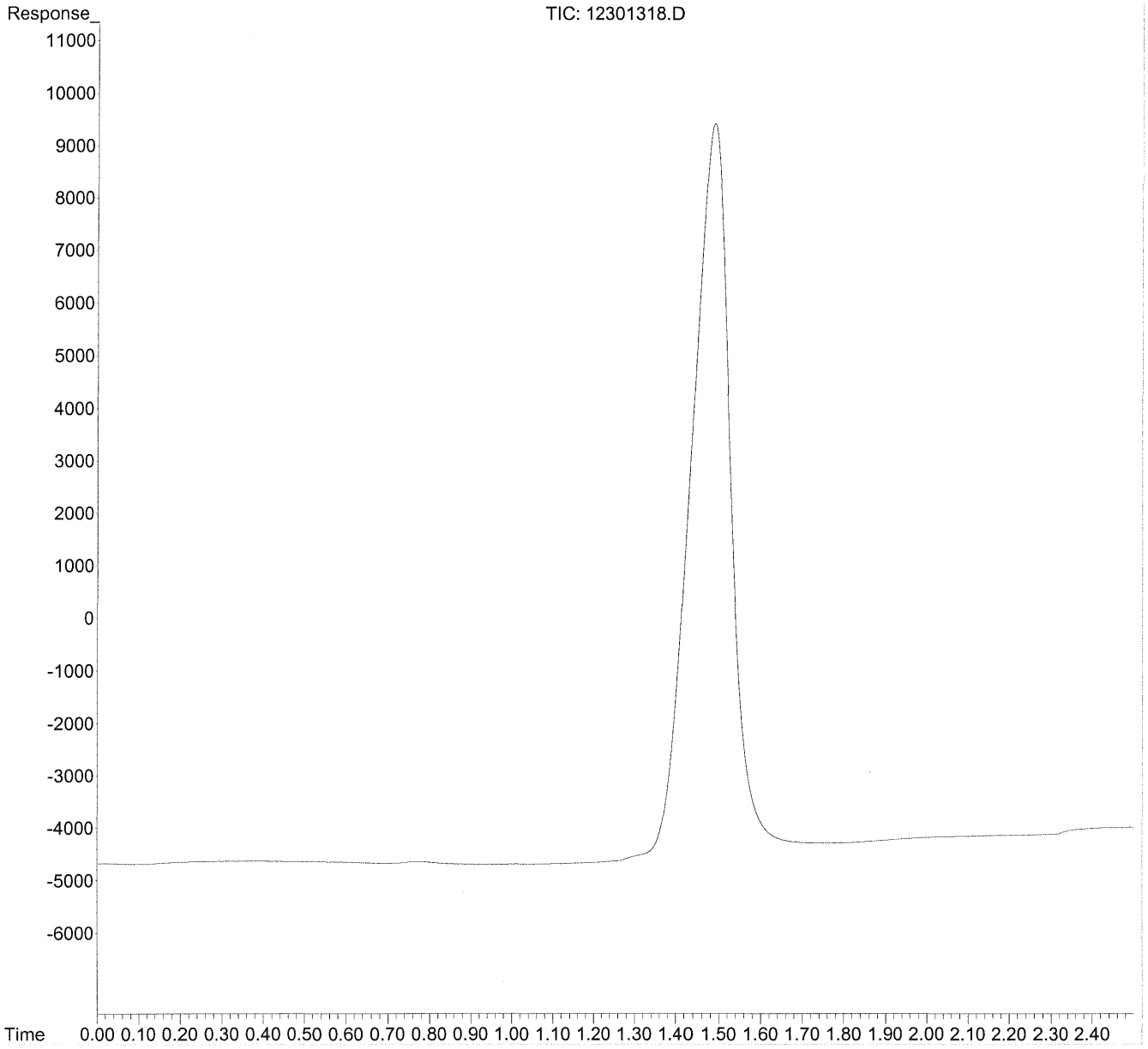
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301318.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:29:23
Operator : NL
Sample : 5675-007 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:59 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301318.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:29:23
Operator : NL
Sample : 5675-007 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:21:59 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Helium	0.000	0	N.D.	ppm
2)	Hydrogen	0.000	0	N.D.	ppm

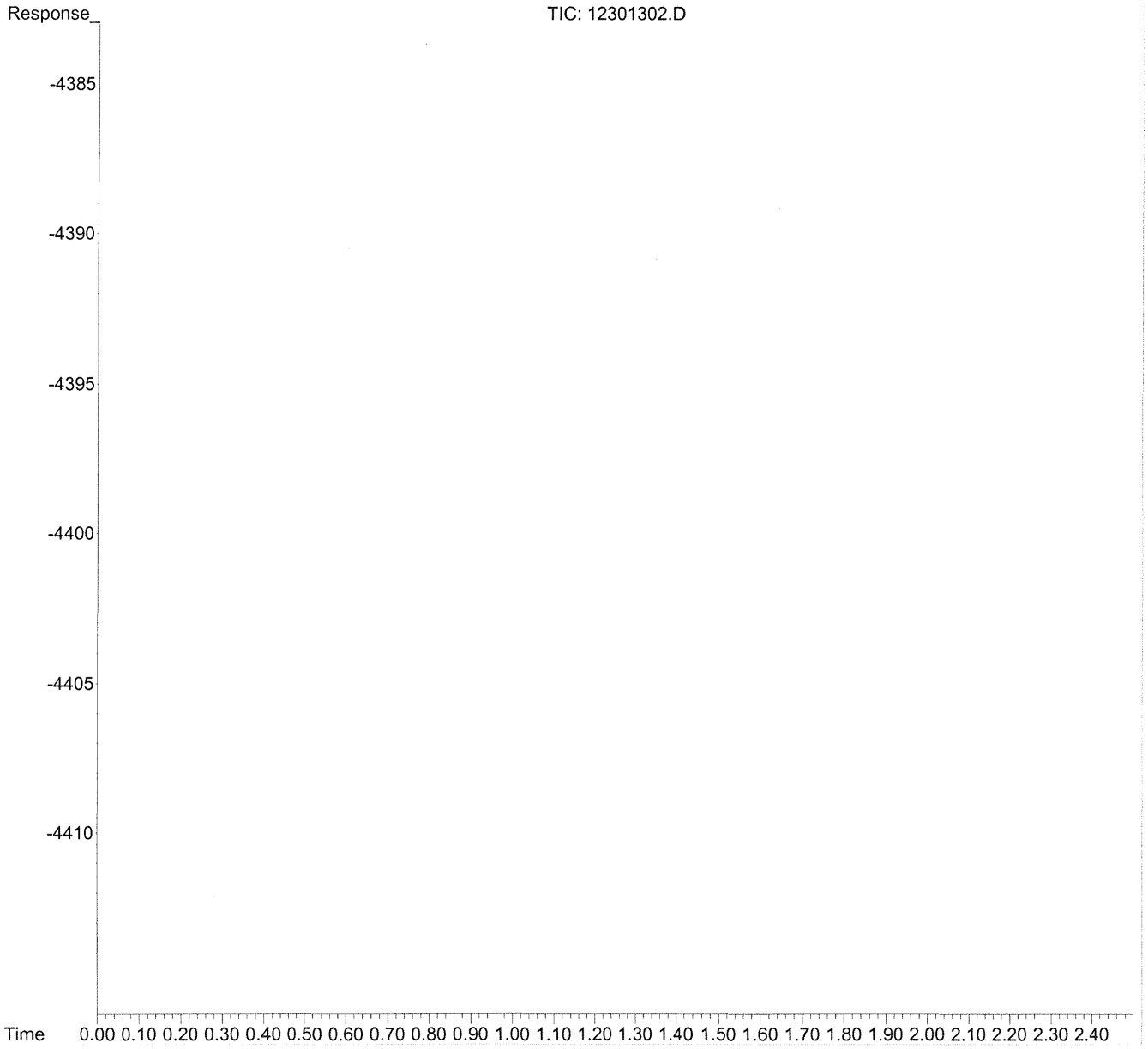
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301302.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:20:10
Operator : NL
Sample : mb
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:11:20 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (Not Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301302.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:20:10
Operator : NL
Sample : mb
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:11:20 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Helium	0.000	0	N.D.	ppm
2)	Hydrogen	0.000	0	N.D.	ppm

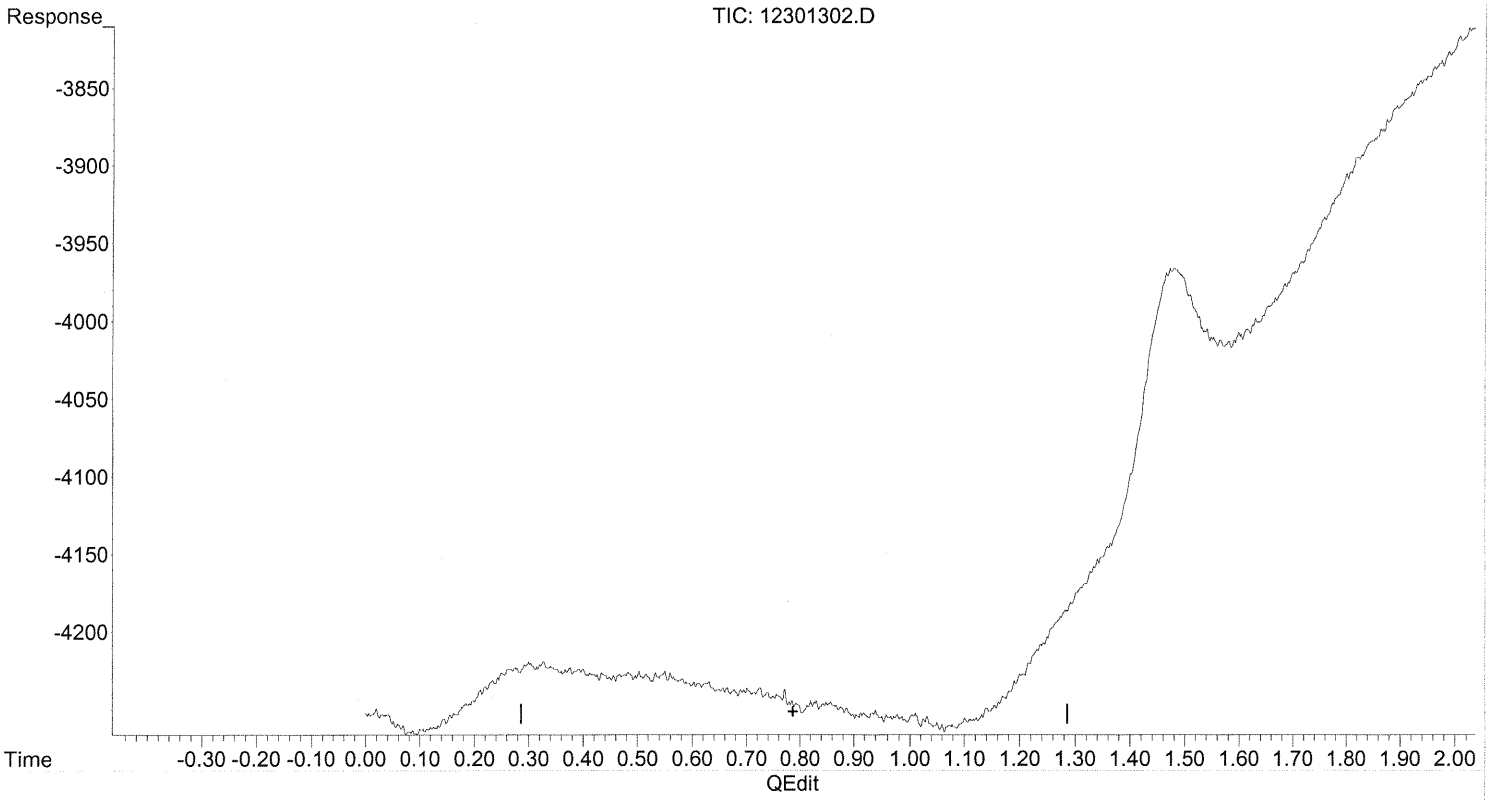
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301302.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:20:10
Operator : NL
Sample : mb
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:11:20 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.786min 0.000 ppm
response 0

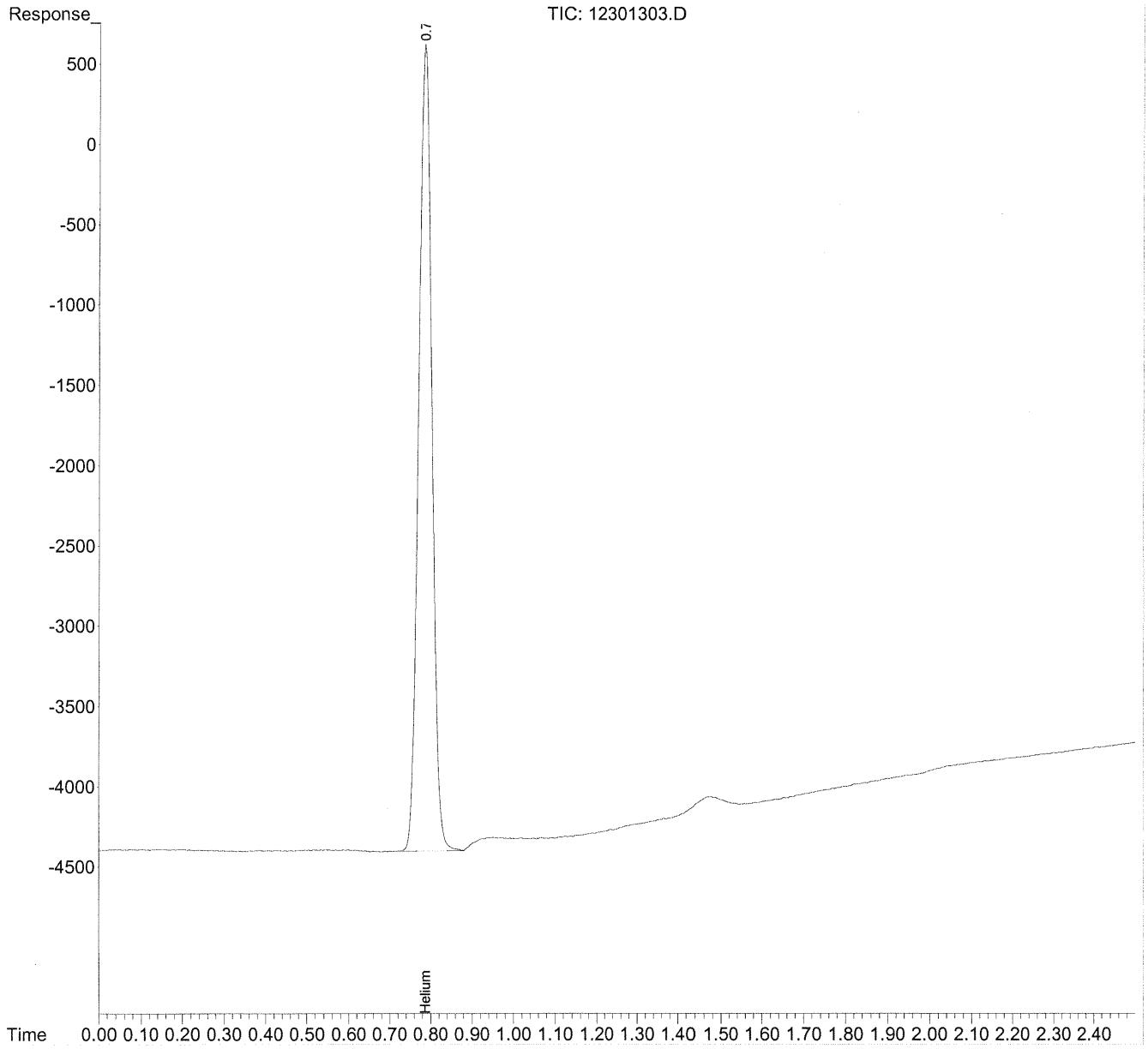
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301303.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:30:06
Operator : NL
Sample : LCS S27-12271301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:34:07 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301303.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:30:06
Operator : NL
Sample : LCS S27-12271301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:34:07 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.787	112268	1088.331	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

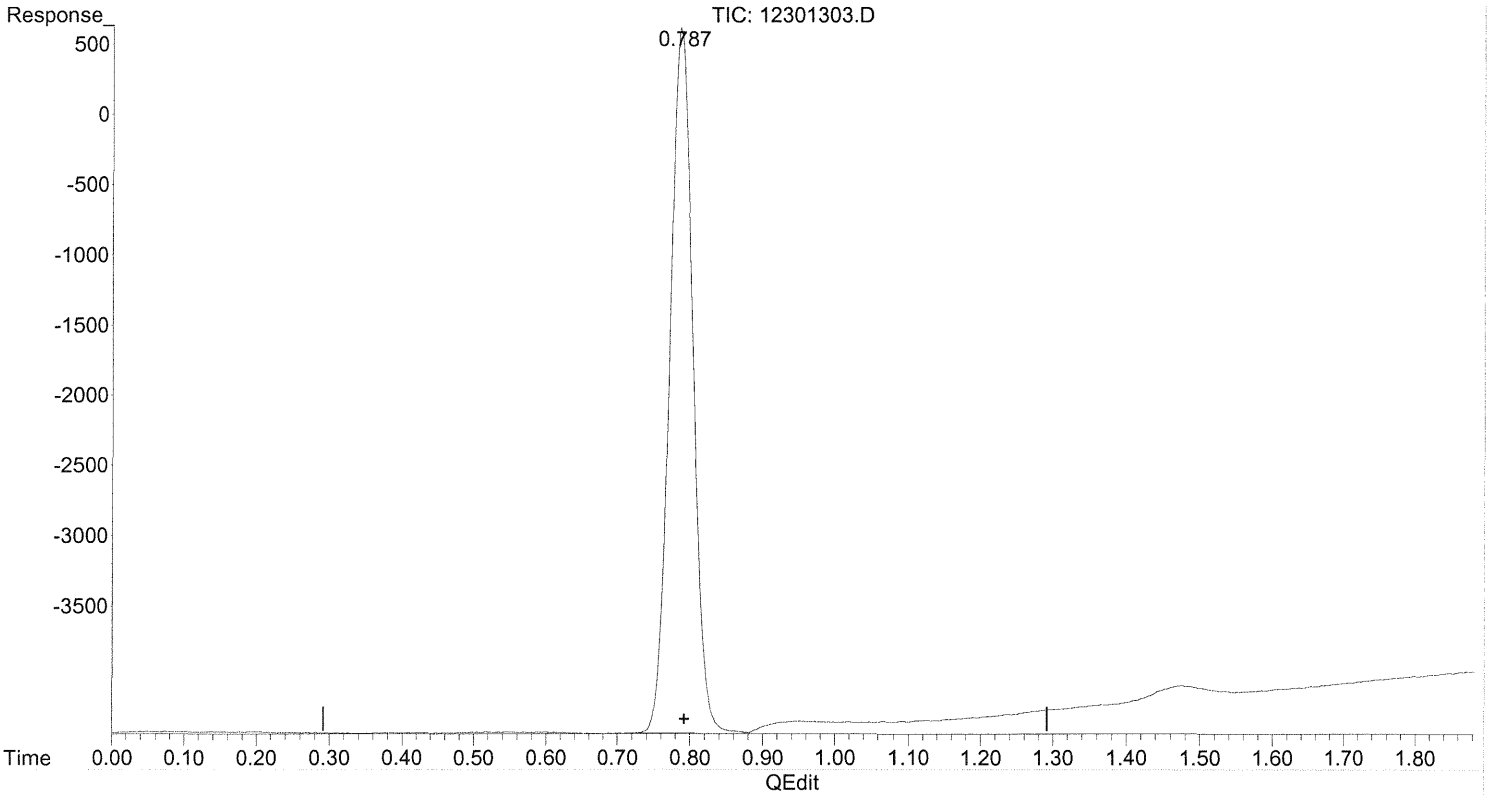
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301303.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:30:06
Operator : NL
Sample : LCS S27-12271301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:34:07 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.787min 1088.331 ppm m
response 112268

NL 1/13/14

DK 12/31/14
NL no previous

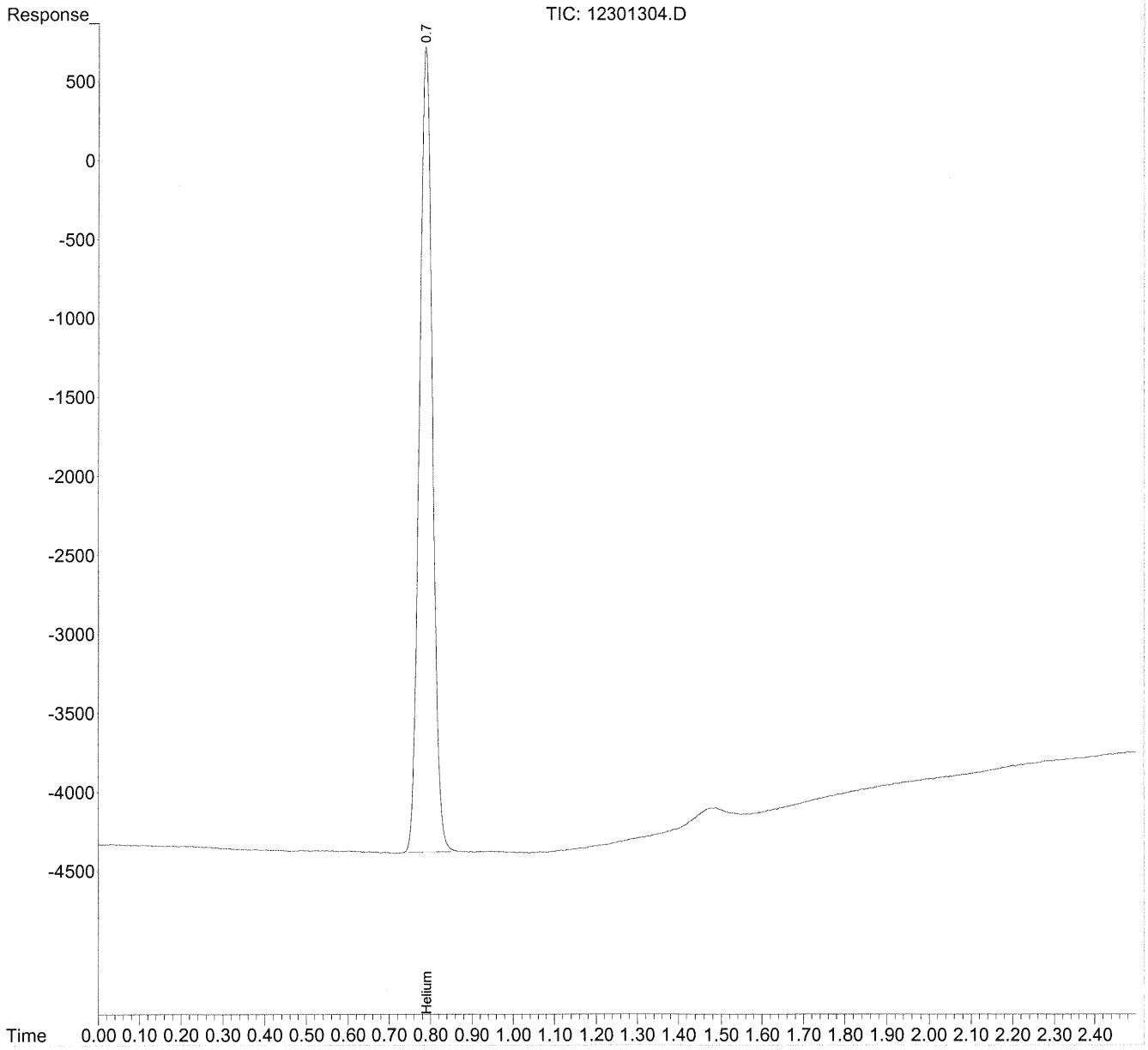
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301304.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:39:08
Operator : NL
Sample : LCSD S27-1227130
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:44:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301304.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:39:08
Operator : NL
Sample : LCSD S27-1227130
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:44:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units	
Target Compounds					
1) Helium	0.790	114493	1109.904	ppm	m
2) Hydrogen	0.000	0	N.D.	ppm	

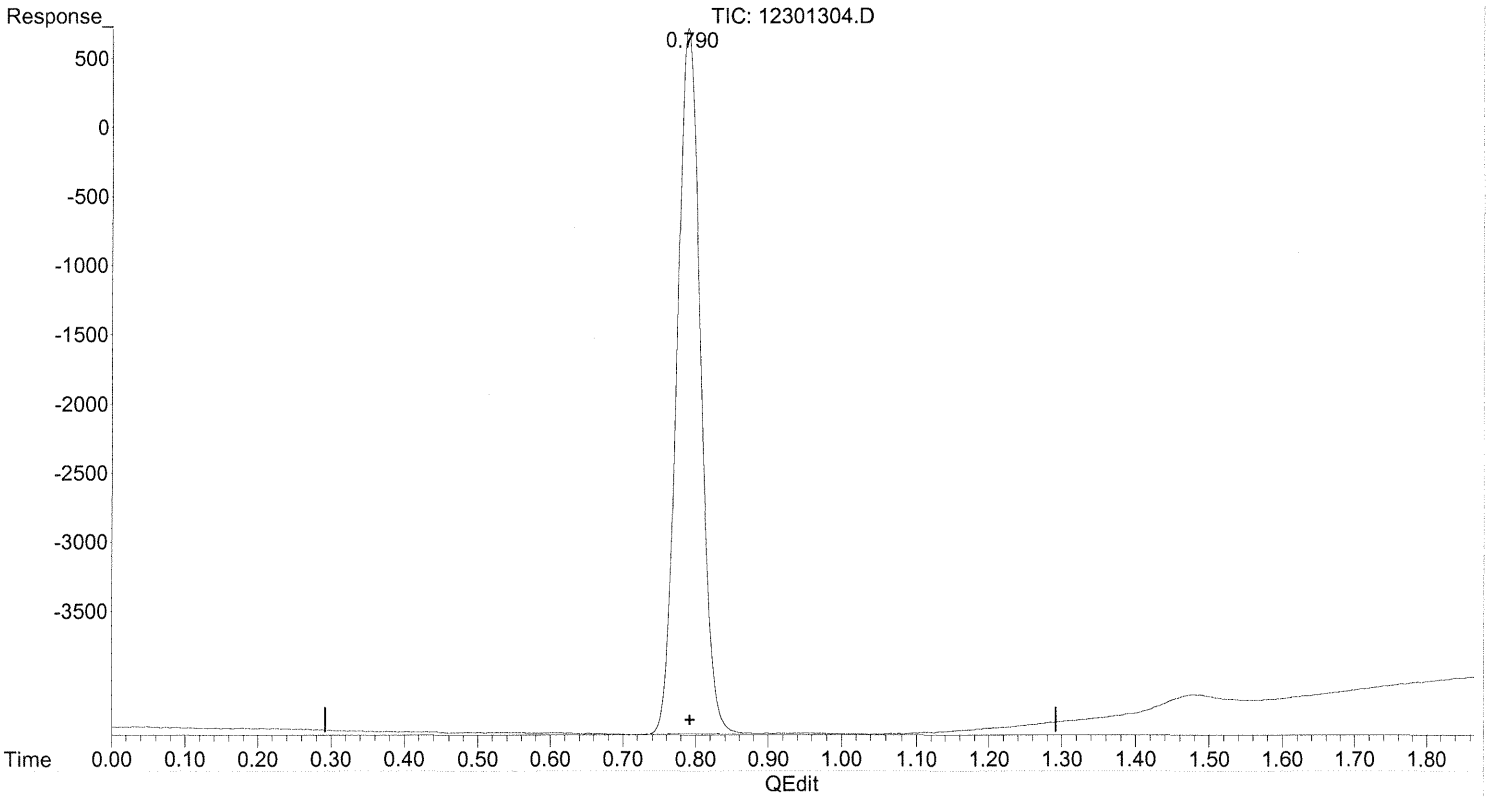
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301304.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 08:39:08
Operator : NL
Sample : LCSD S27-1227130
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 08:44:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.790min 1109.904 ppm m
response 114493

MB/B/A

LM 1/2/14 no processing

(+) = Expected Retention Time

Method Path : I:\GC08\METHODS\
Method File : HH122013.M
Title : Hydrogen and Helium by EPA Method 3C
Last Update : Fri Dec 20 09:37:07 2013
Response Via : Initial Calibration

20DEC13

Calibration Files
20 =12201304.D 100 =12201305.D 1000 =12201309.D
5000 =12201307.D 9999 =12201308.D

	Compound	20	100	1000	5000	9999	Avg		%RSD
1)	Helium	0.917	0.906	1.208	1.064	1.062	1.032	E2	12.08
2)	Hydrogen	1.484	1.484	1.924	1.757	1.772	1.684	E2	11.54

(#) = Out of Range

Edit Compounds

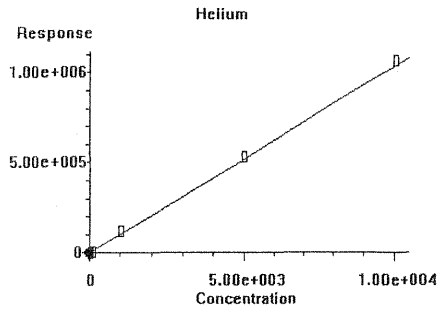
Search by: Ret Time | Name | Index | Find Compound

Compound Database
External Standard Compour
Helium
Hydrogen

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response
20	20.000000	1834.618400
100	100.000000	9056.987406
1000	1000.000000	120831.371692
5000	5000.000000	532003.578257
9999	10000.000000	1062455.246400

Lvl ID	Concentration	Response



0.000e+000	Quadratic term
1.032e+002	Linear term
0.000e+000	Constant term
12.1%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds

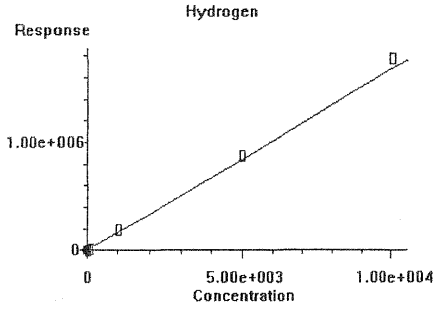
Search by: Ret Time | Name | Index | Find Compound

Compound Database
External Standard Compour
Helium
[illegible]

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response
20	20.000000	2967.429666
100	100.000000	14836.558574
1000	1000.000000	192424.454708
5000	5000.000000	878621.267171
9999	10000.000000	1771796.343180

Lvl ID	Concentration	Response



0.000e+000	Quadratic term
1.684e+002	Linear term
0.000e+000	Constant term
11.5%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Method Path : I:\GC08\METHODS\
Method File : HH122013.M
Title : Hydrogen and Helium by EPA Method 3C
Last Update : Fri Dec 20 09:37:07 2013
Response Via : Initial Calibration

20DEC13

#	ID	Conc	ISTD Conc	Path\File
1	20	20	0	I:\GC08\DATA\H2_HE\2013_12\20\12201304.D
2	100	100	0	I:\GC08\DATA\H2_HE\2013_12\20\12201305.D
3	1000	1000	0	I:\GC08\DATA\H2_HE\2013_12\20\12201309.D
4	5000	5000	0	I:\GC08\DATA\H2_HE\2013_12\20\12201307.D
5	9999	10000	0	I:\GC08\DATA\H2_HE\2013_12\20\12201308.D

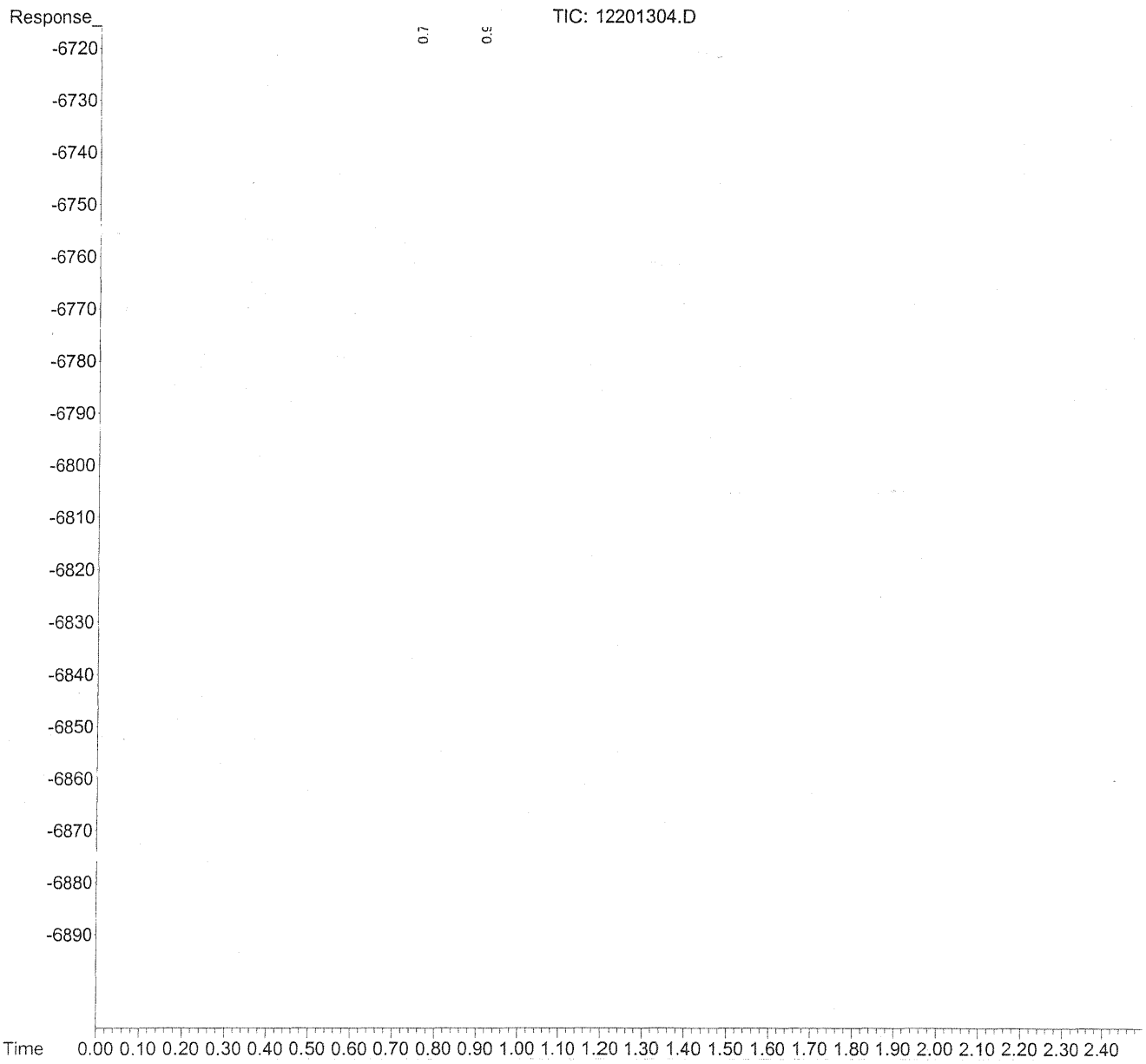
#	ID	Update Time	Quant Time	Acquisition Time
1	20	Dec 20 09:36 2013	Dec 20 09:32 2013	20-Dec-2013, 07:50:07
2	100	Dec 20 09:36 2013	Dec 20 09:32 2013	20-Dec-2013, 07:58:59
3	1000	Dec 20 09:37 2013	Dec 20 09:31 2013	20-Dec-2013, 08:47:42
4	5000	Dec 20 09:36 2013	Dec 20 09:33 2013	20-Dec-2013, 08:17:34
5	9999	Dec 20 09:36 2013	Dec 20 09:33 2013	20-Dec-2013, 08:28:54

HH122013.M Fri Dec 20 09:40:50 2013

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:32:13 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:32:13 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

20DEC13

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.767	1835	17.543	ppm	m
2)	Hydrogen	0.920	2967	17.783	ppm	m

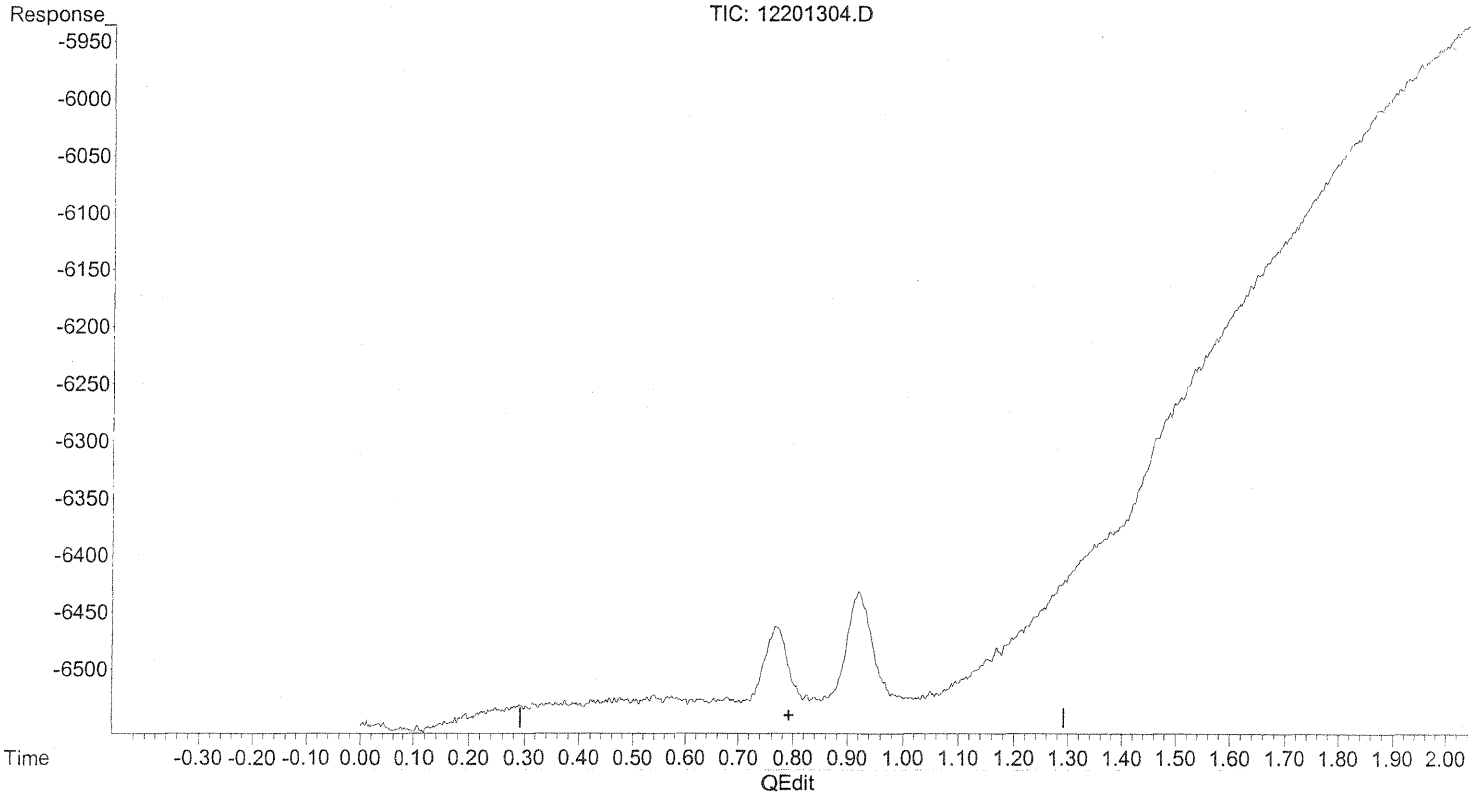
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:26 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.792min 0.000 ppm
response 0

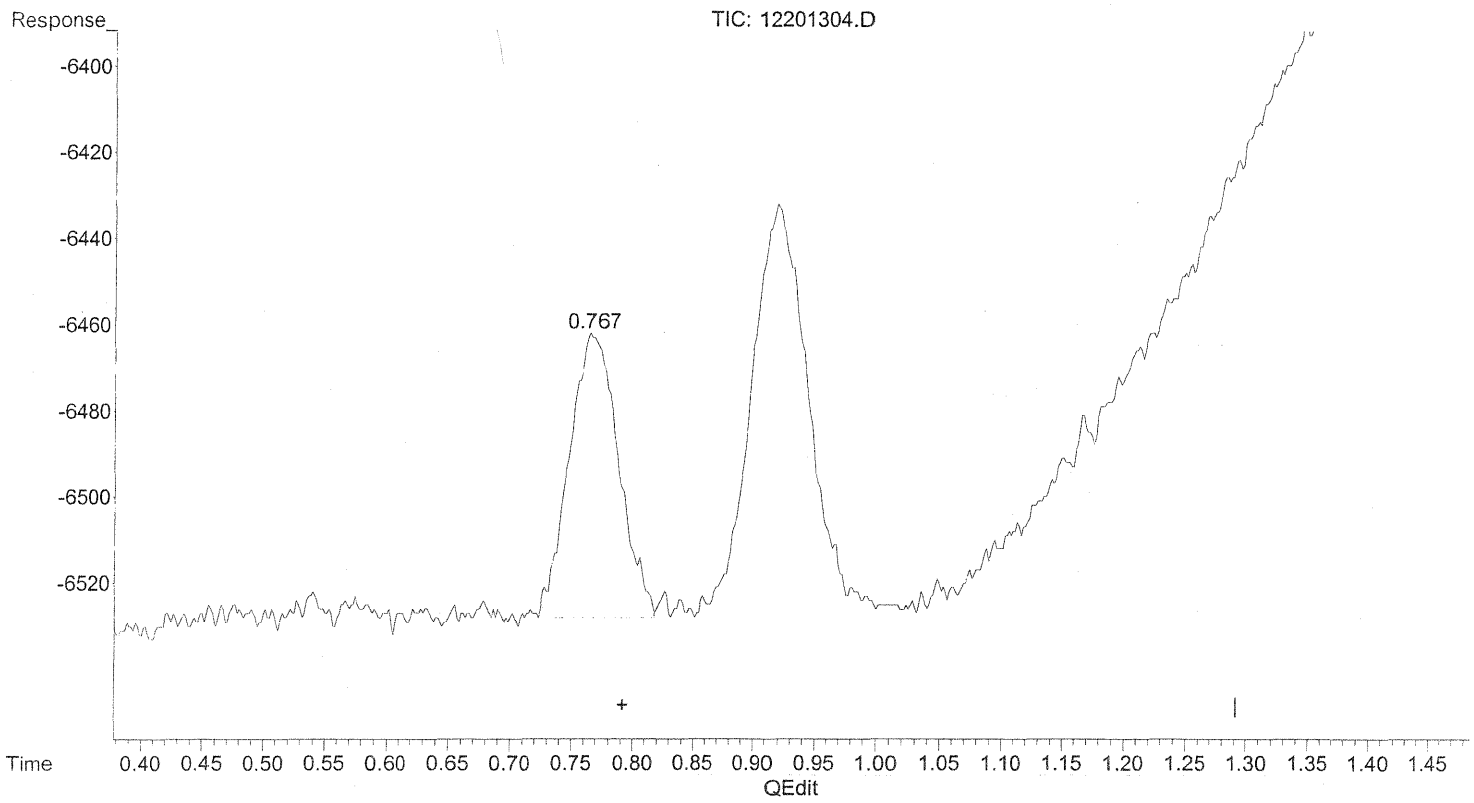
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:26 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.767min 17.543 ppm m
response 1835

MP
20DEC13

LM, 12/21/13

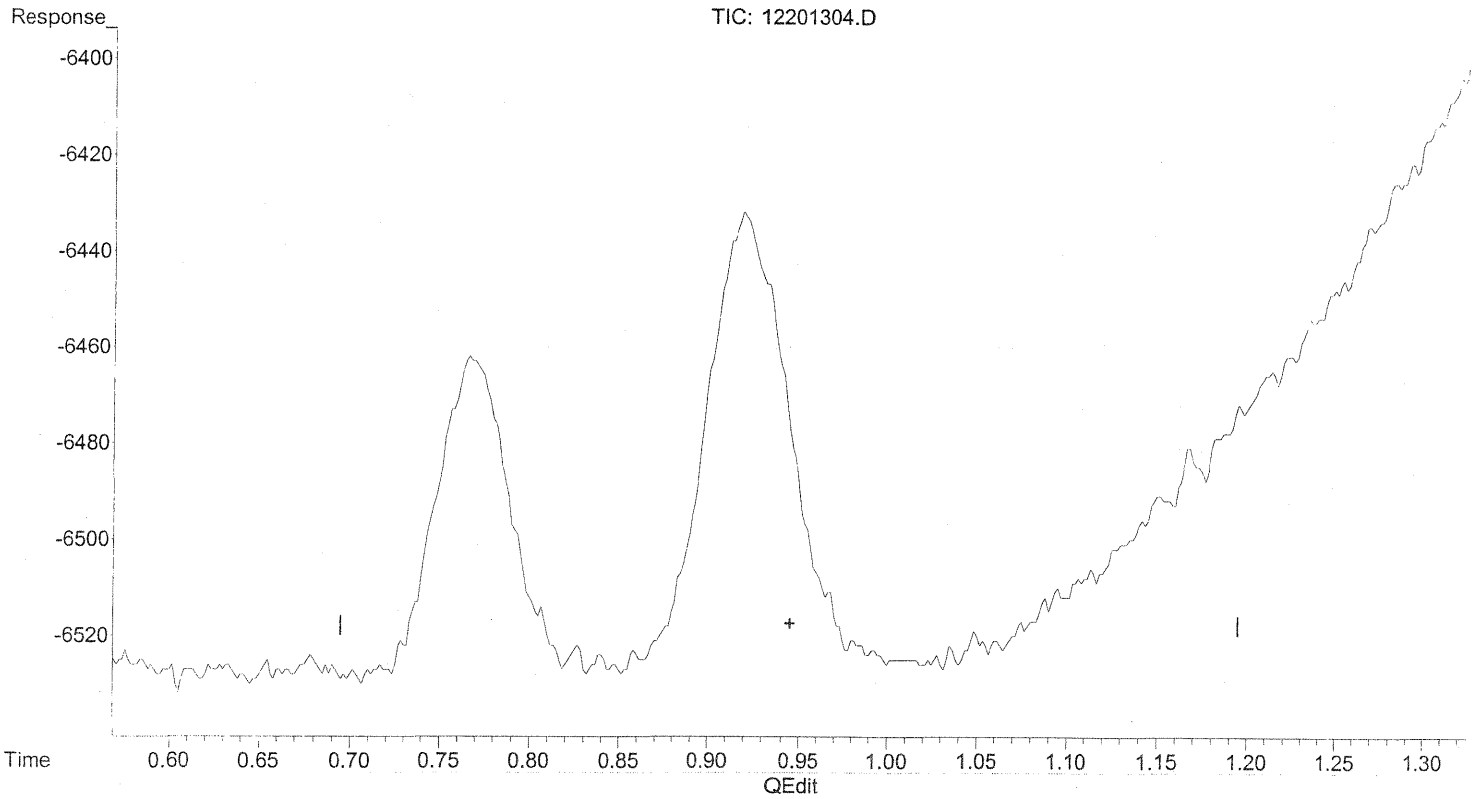
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:26 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.922min 18.957 ppm
response 3163

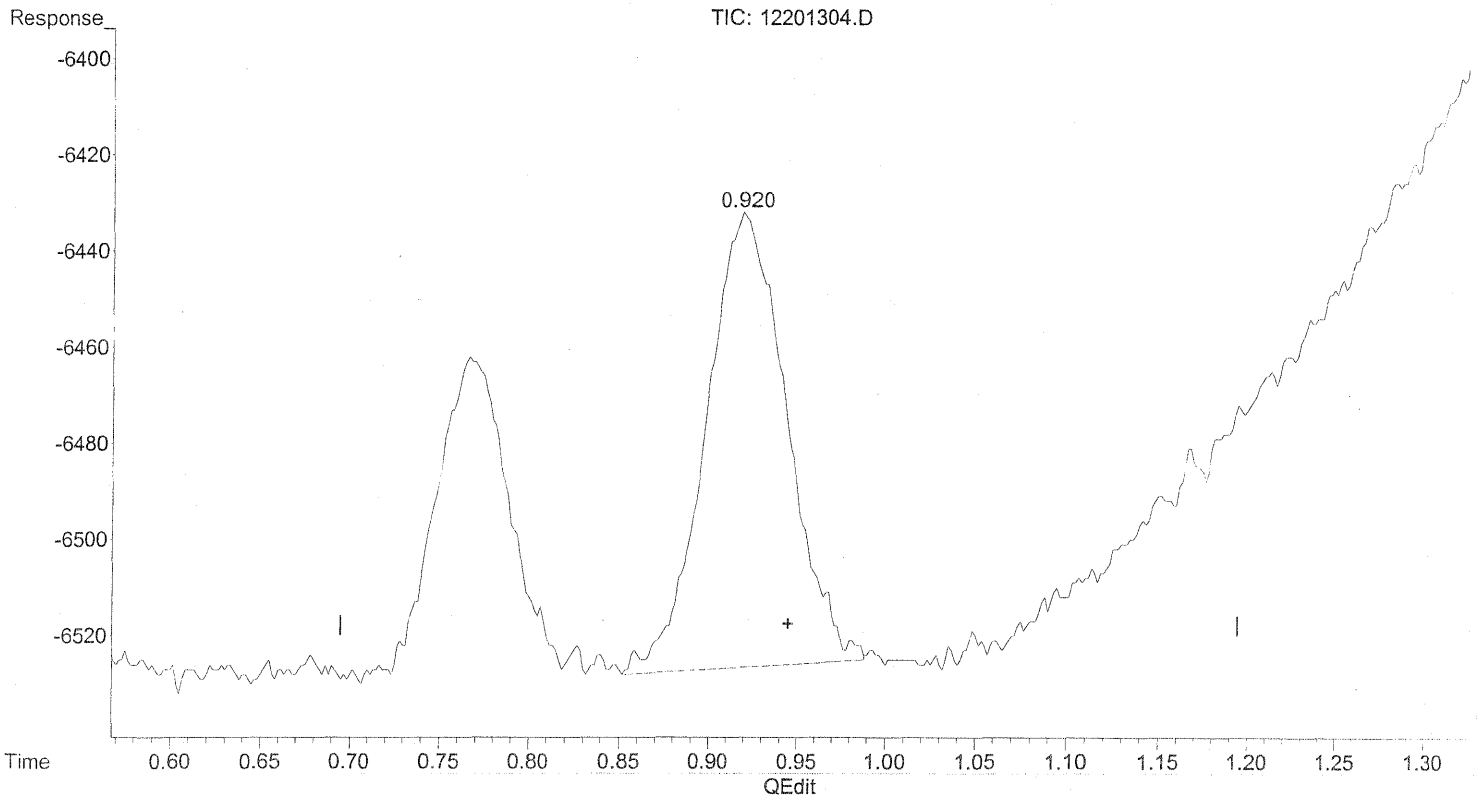
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201304.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:50:07
Operator : JY
Sample : 20ppm ICAL Std 0.2ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:26 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.920min 17.783 ppm m
response 2967

MP
20DEC13

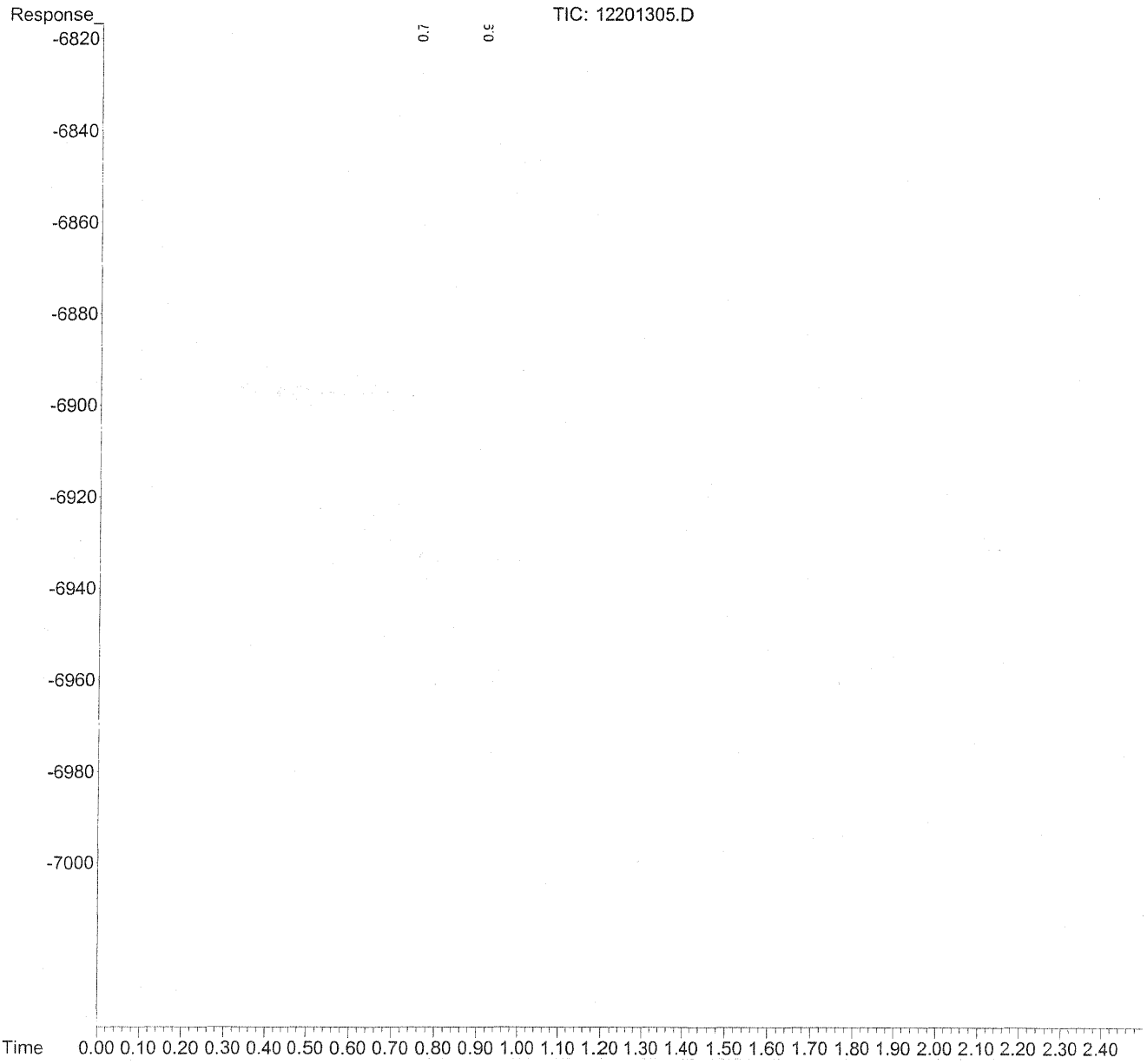
12/21/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:32:36 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:32:36 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) Helium	0.764	9057	86.605 ppm m
2) Hydrogen	0.920	14837	88.912 ppm m

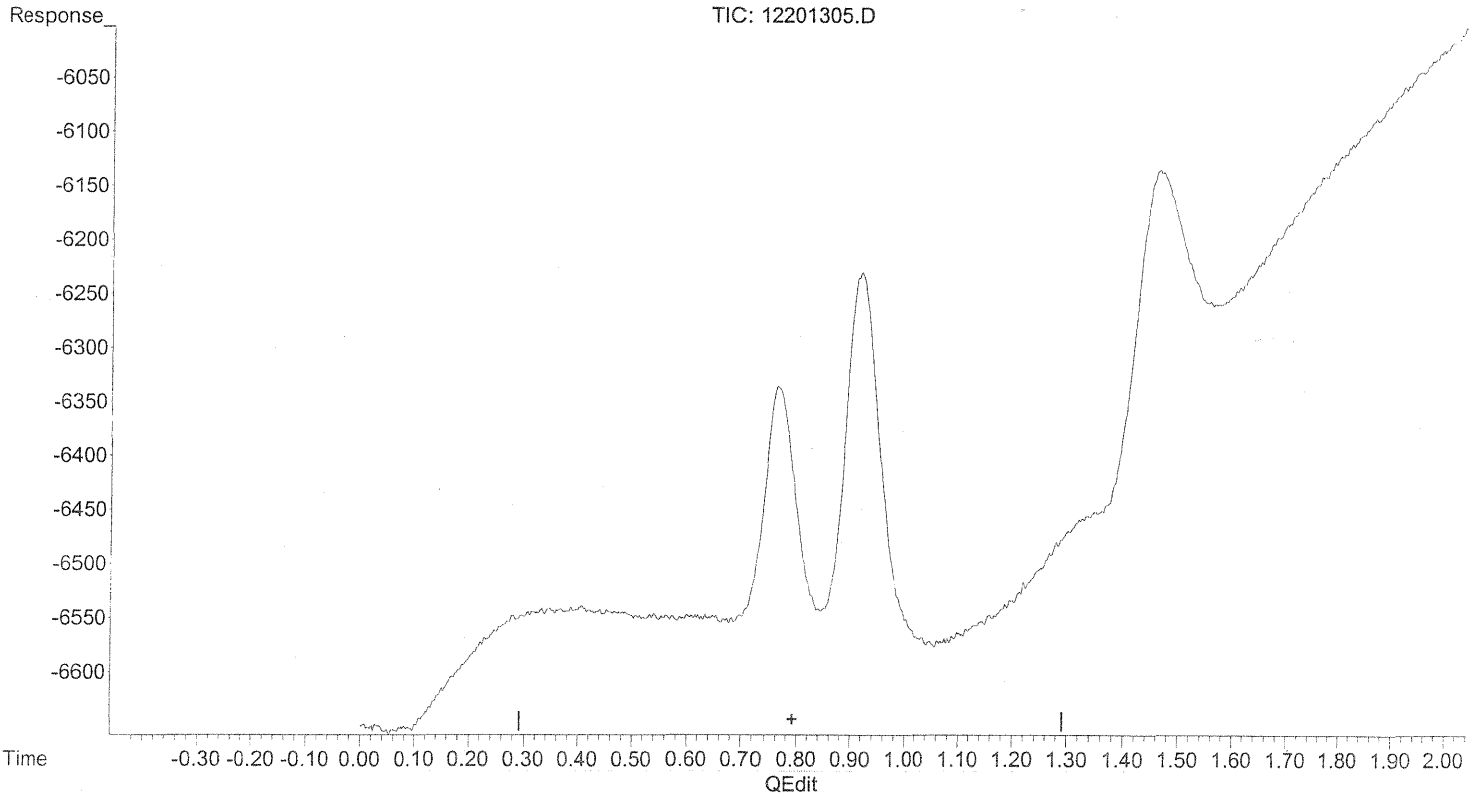
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:29 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.792min 0.000 ppm
response 0

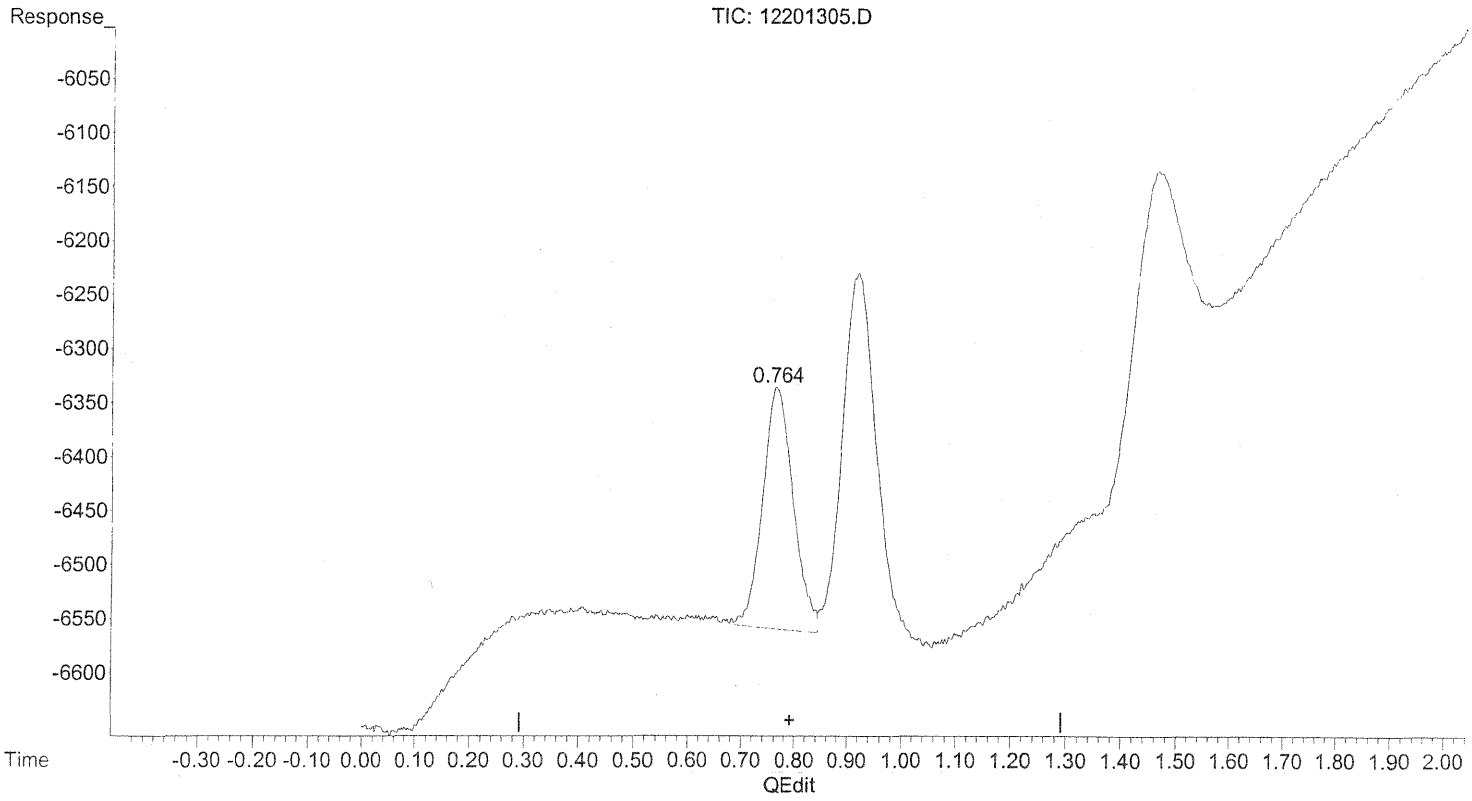
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:29 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.764min 86.605 ppm m
response 9057

MP
20DEC13

12/21/13

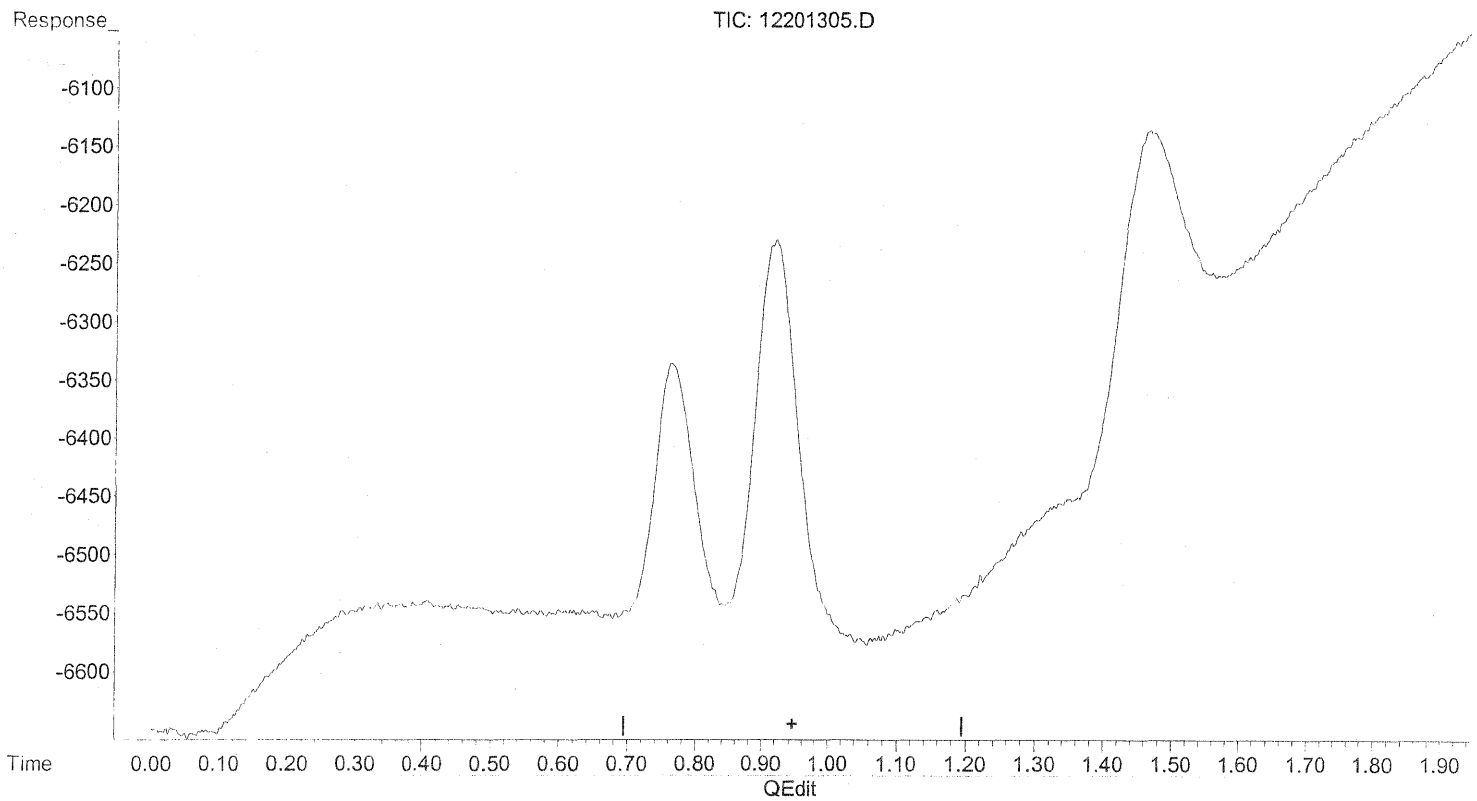
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:29 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.945min 0.000 ppm
response 0

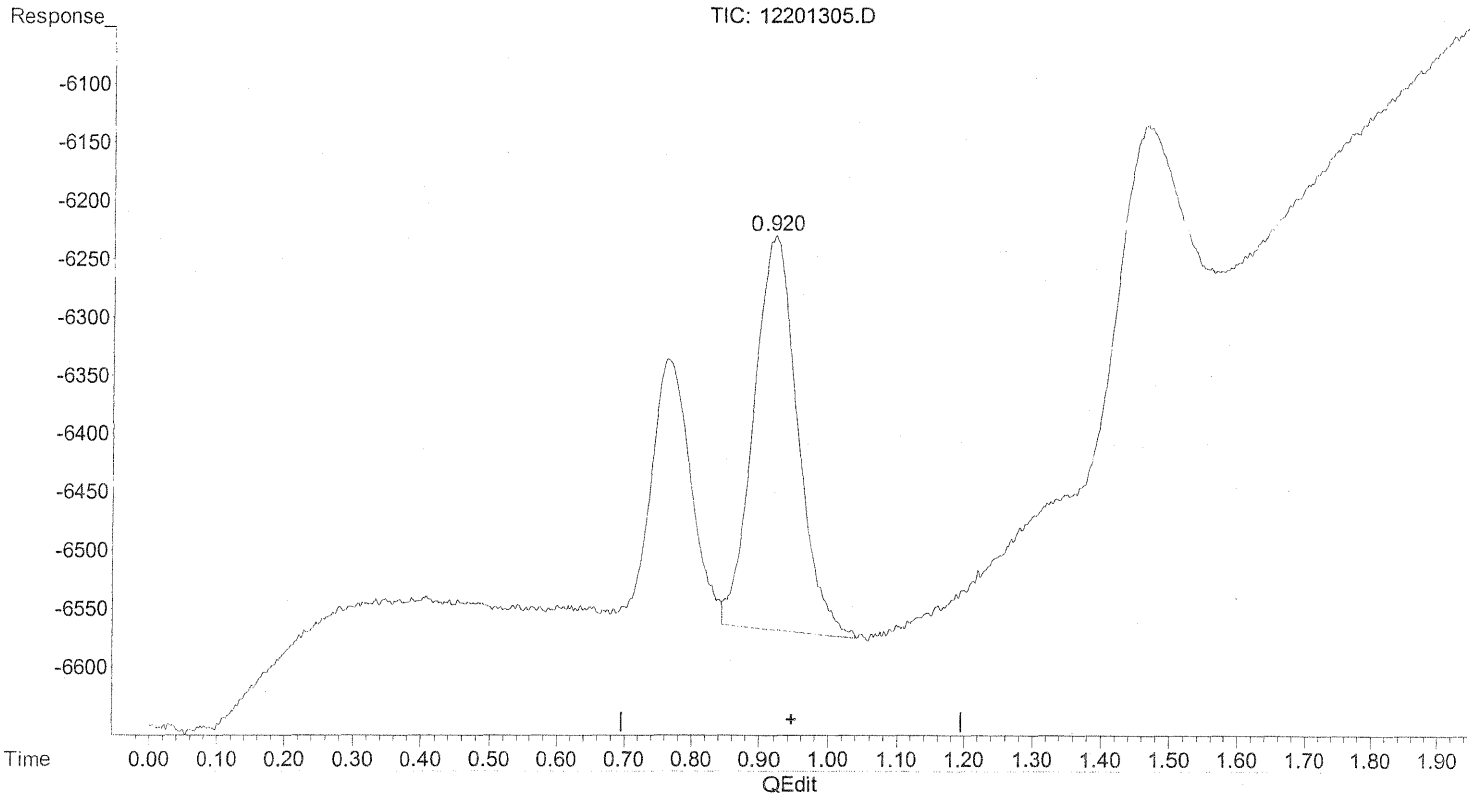
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201305.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 07:58:59
Operator : JY
Sample : 100ppm ICAL Std 1.0ml S27-12201302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:29 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.920min 88.912 ppm m
response 14837

MP
20DEC13

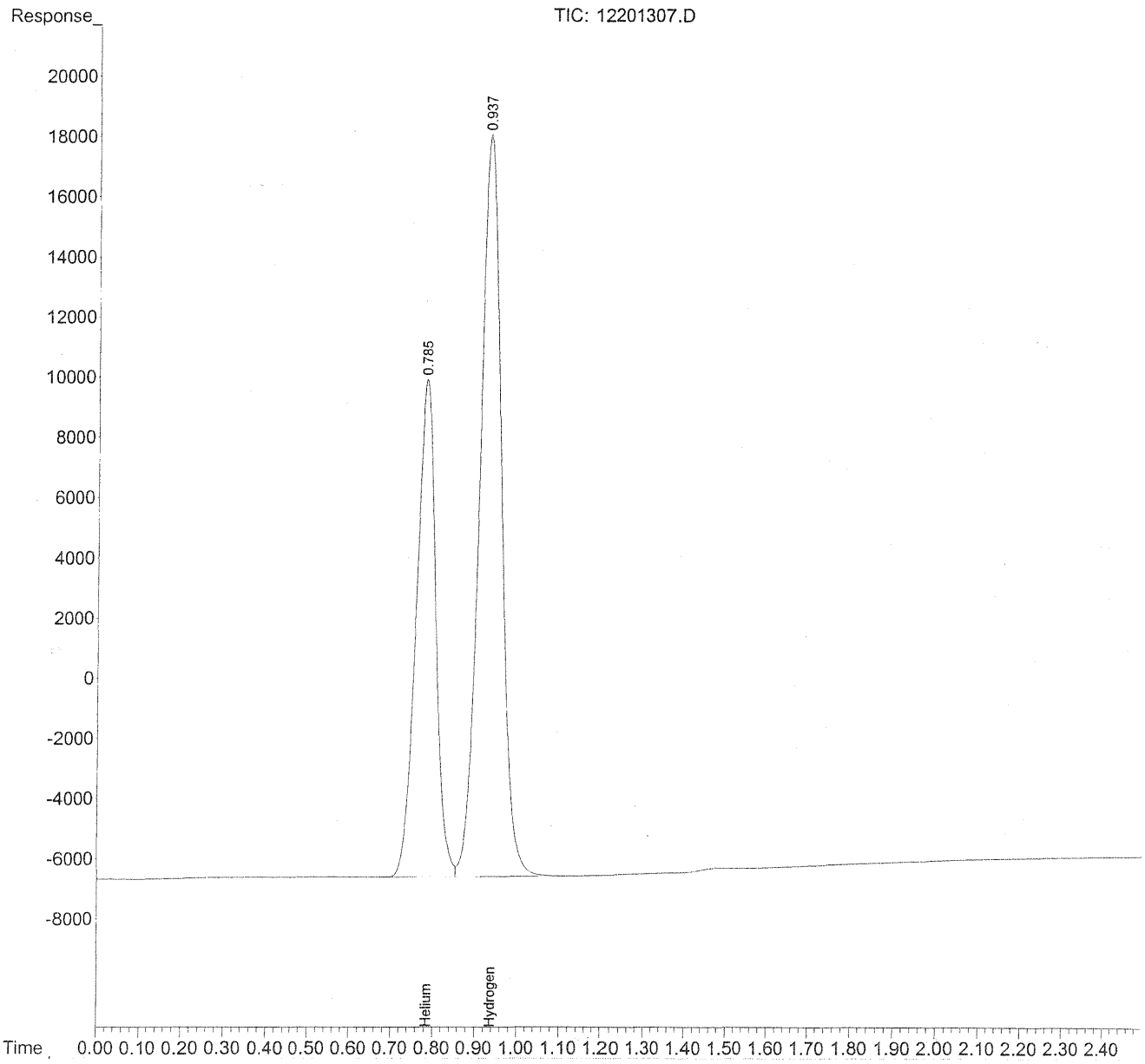
12/20/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201307.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:17:34
Operator : JY
Sample : 5000ppm ICAL Std 0.5ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:33:11 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201307.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:17:34
Operator : JY
Sample : 5000ppm ICAL Std 0.5ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:33:11 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

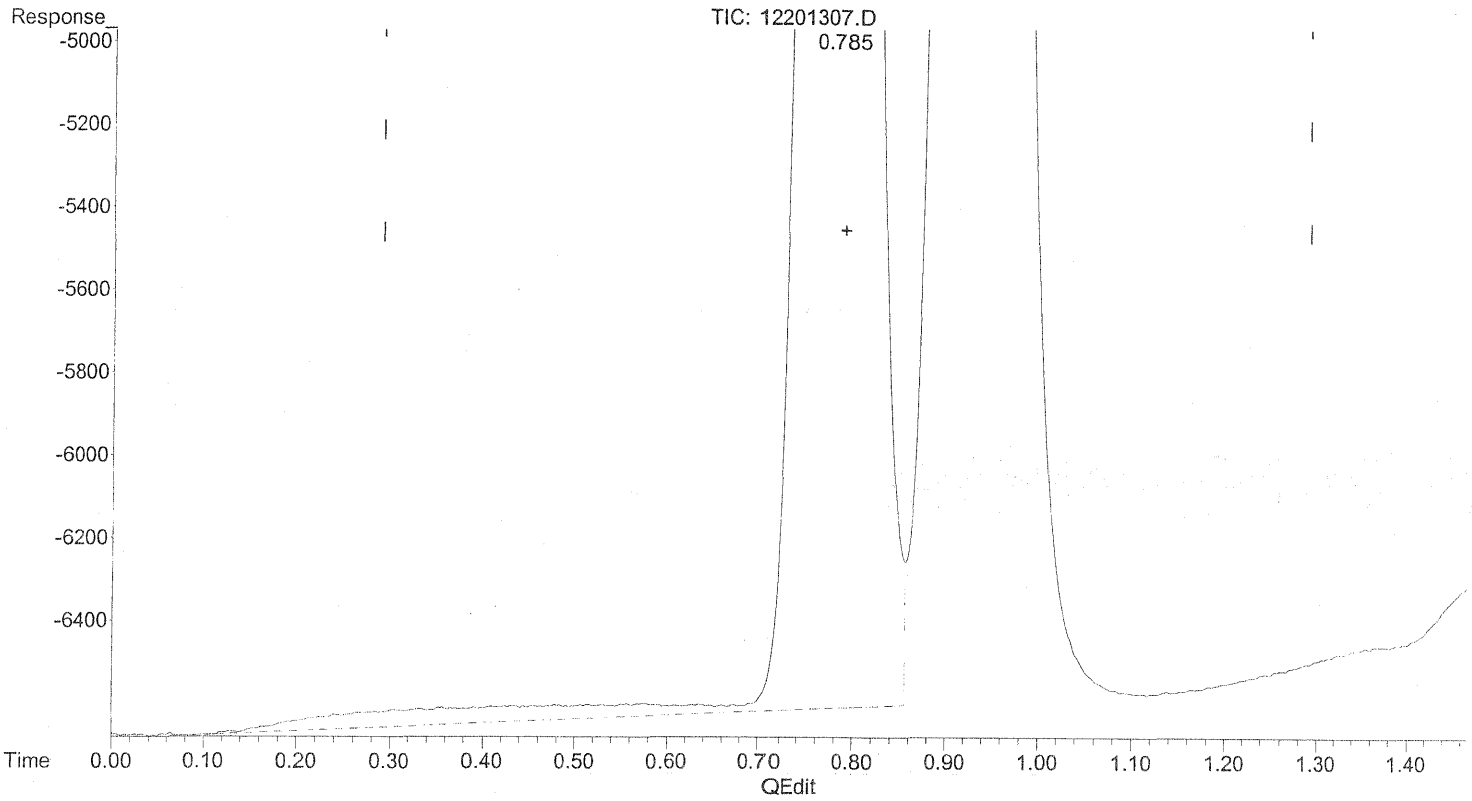
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.785	532004	5087.124	ppm	m
2)	Hydrogen	0.937	878621	5265.392	ppm	

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201307.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:17:34
Operator : JY
Sample : 5000ppm ICAL Std 0.5ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:35 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



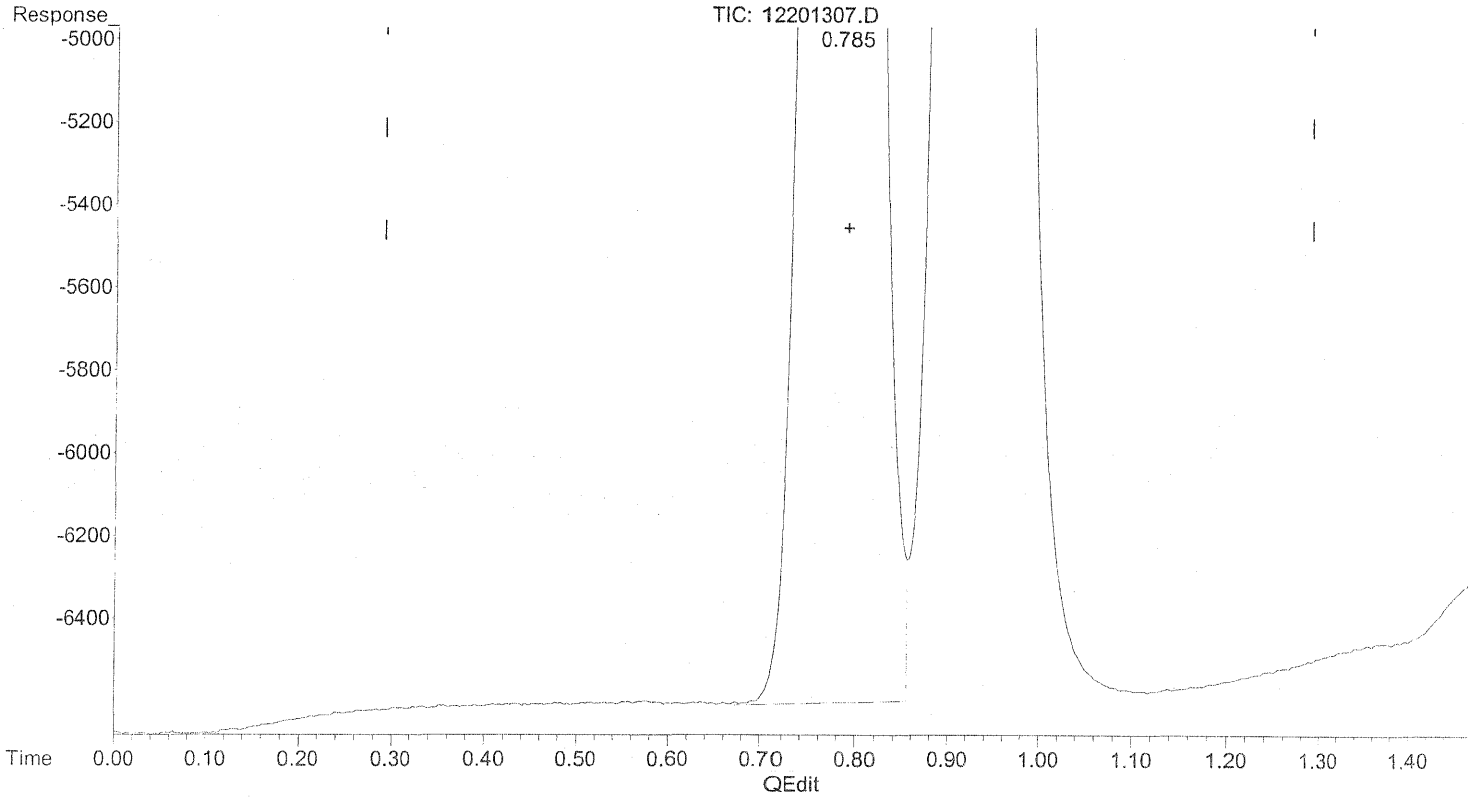
(1) Helium
0.785min 5183.602 ppm
response 542093

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201307.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:17:34
Operator : JY
Sample : 5000ppm ICAL Std 0.5ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:35 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.785min 5087.124 ppm m
response 532004

BLC
20DEC13

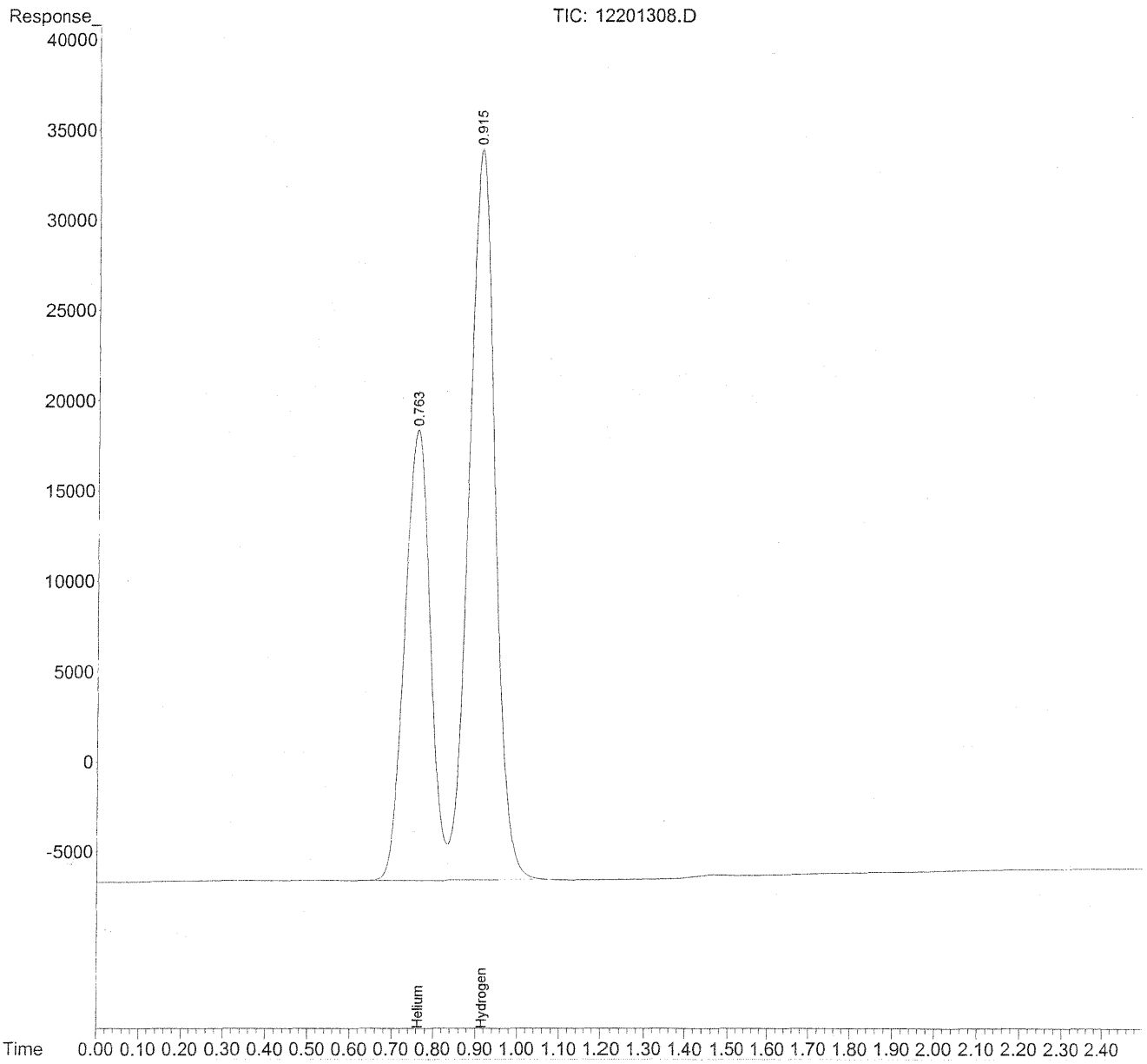
12/20/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:33:51 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:33:51 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

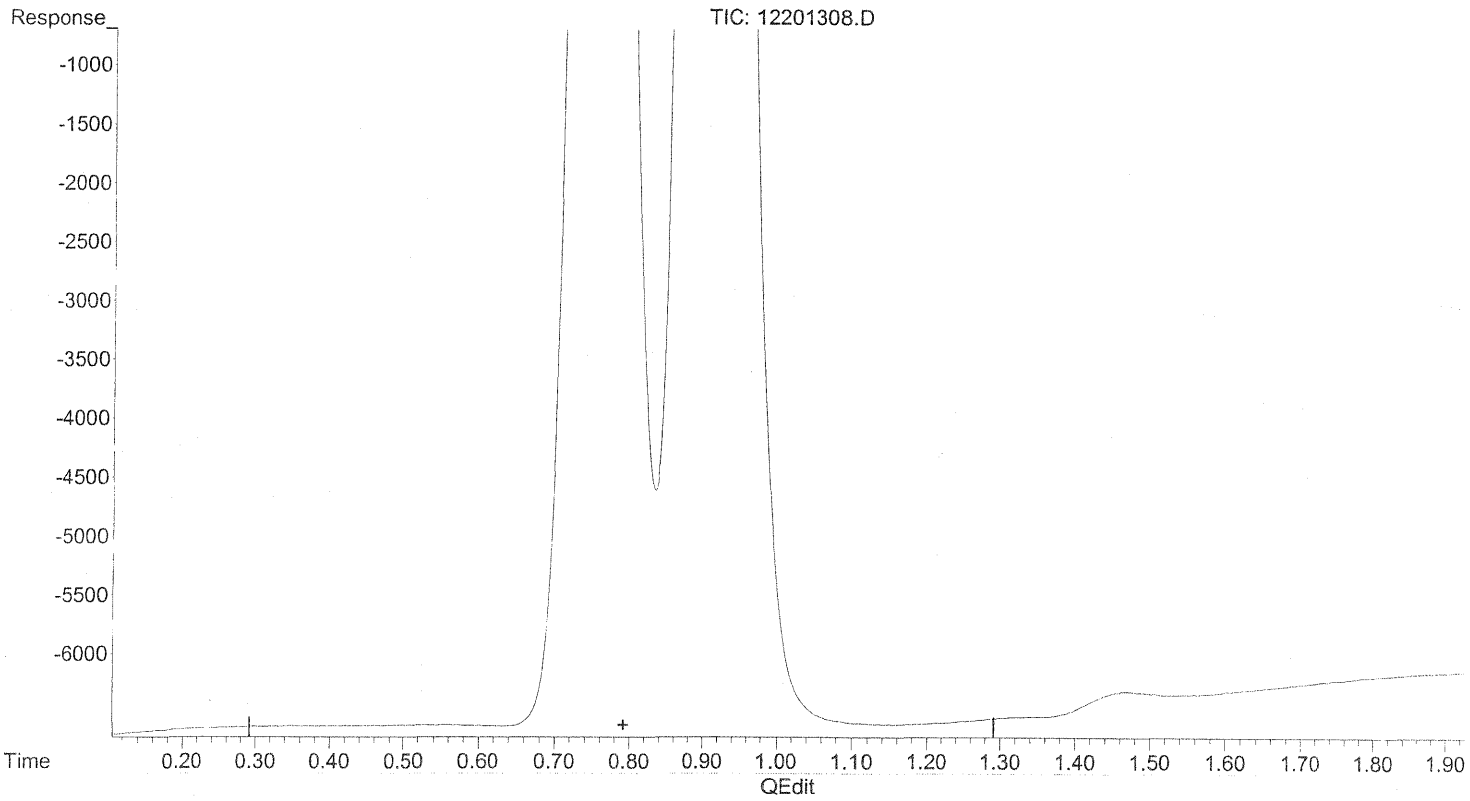
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.763	1062455	10159.409	ppm	m
2)	Hydrogen	0.915	1771796	10618.002	ppm	m

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:38 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



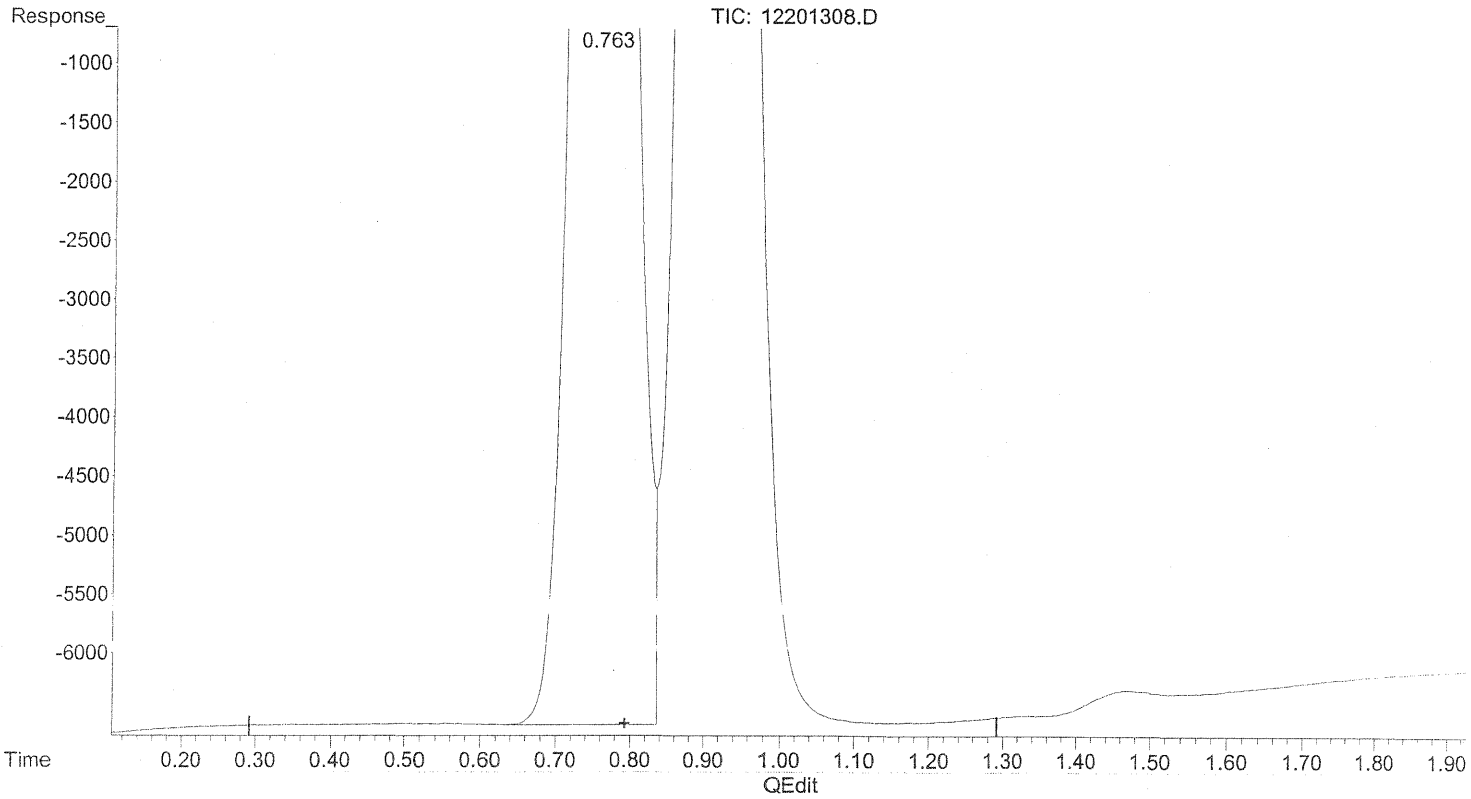
(1) Helium
0.792min 0.000 ppm
response 0

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:38 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.763min 10159.409 ppm m
response 1062455

MP
20DEC13

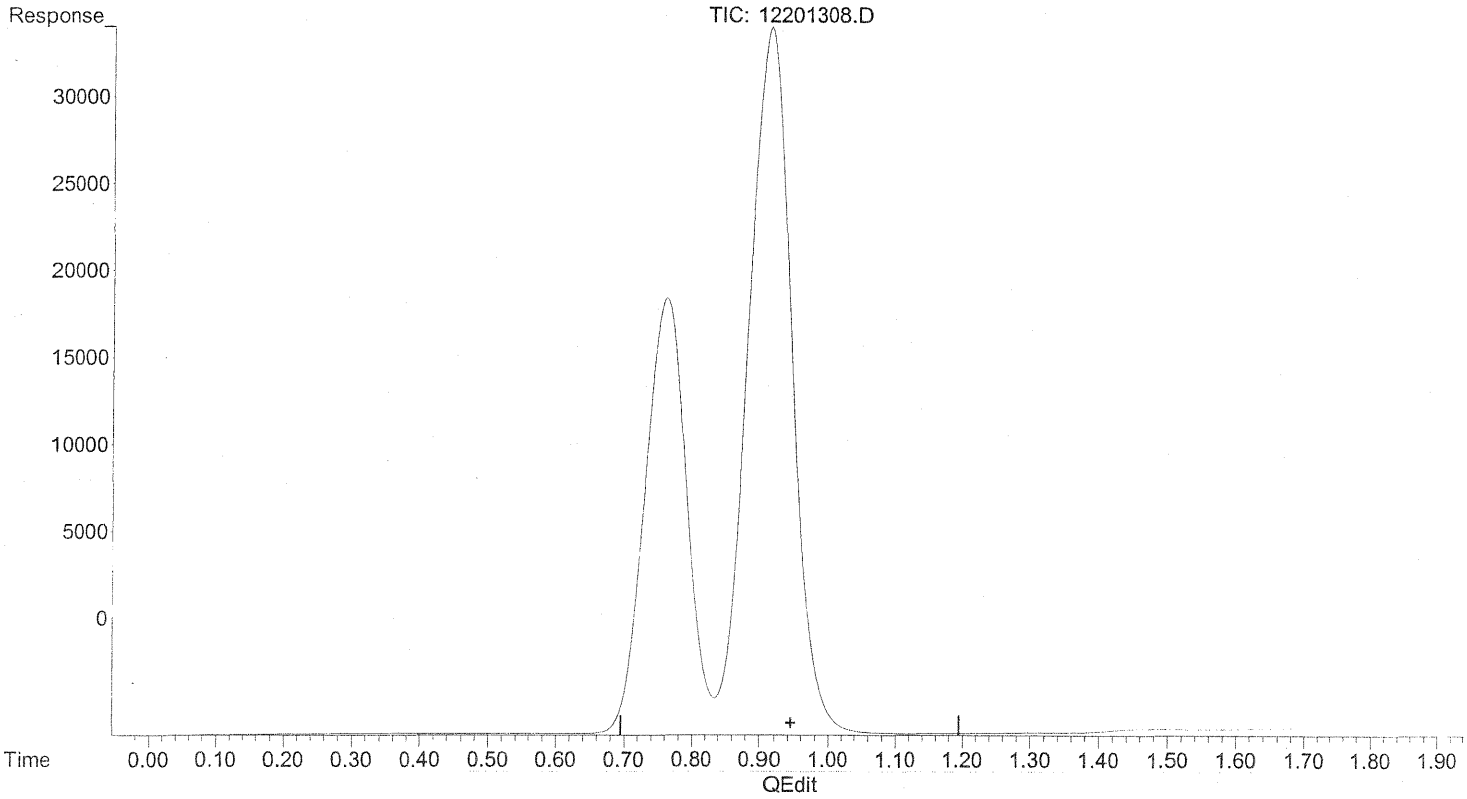
12/20/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:38 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.945min 0.000 ppm
response 0

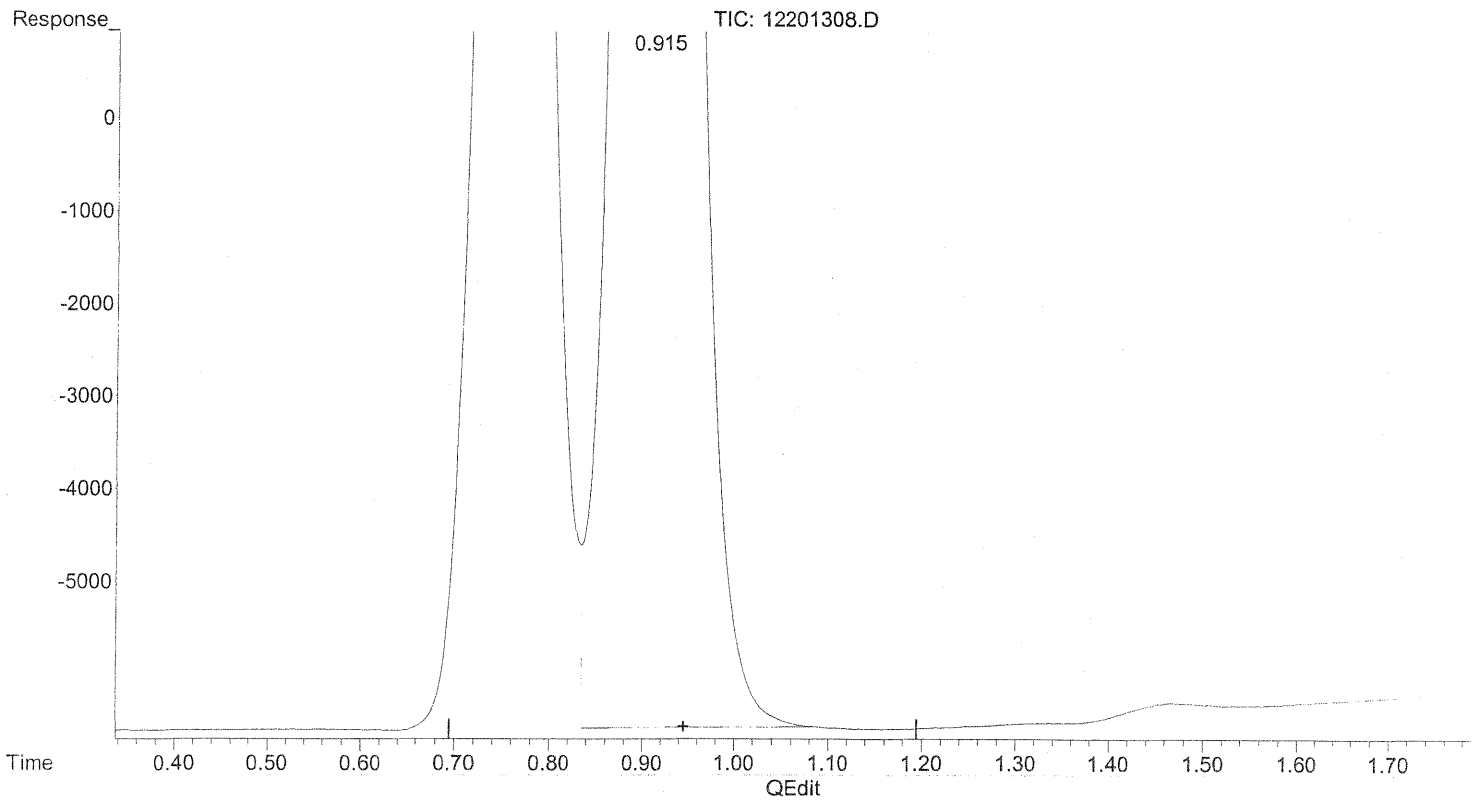
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201308.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:28:54
Operator : JY
Sample : 10000ppm ICAL Std 1.0ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:38 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.915min 10618.002 ppm m
response 1771796

MP
20DEC13

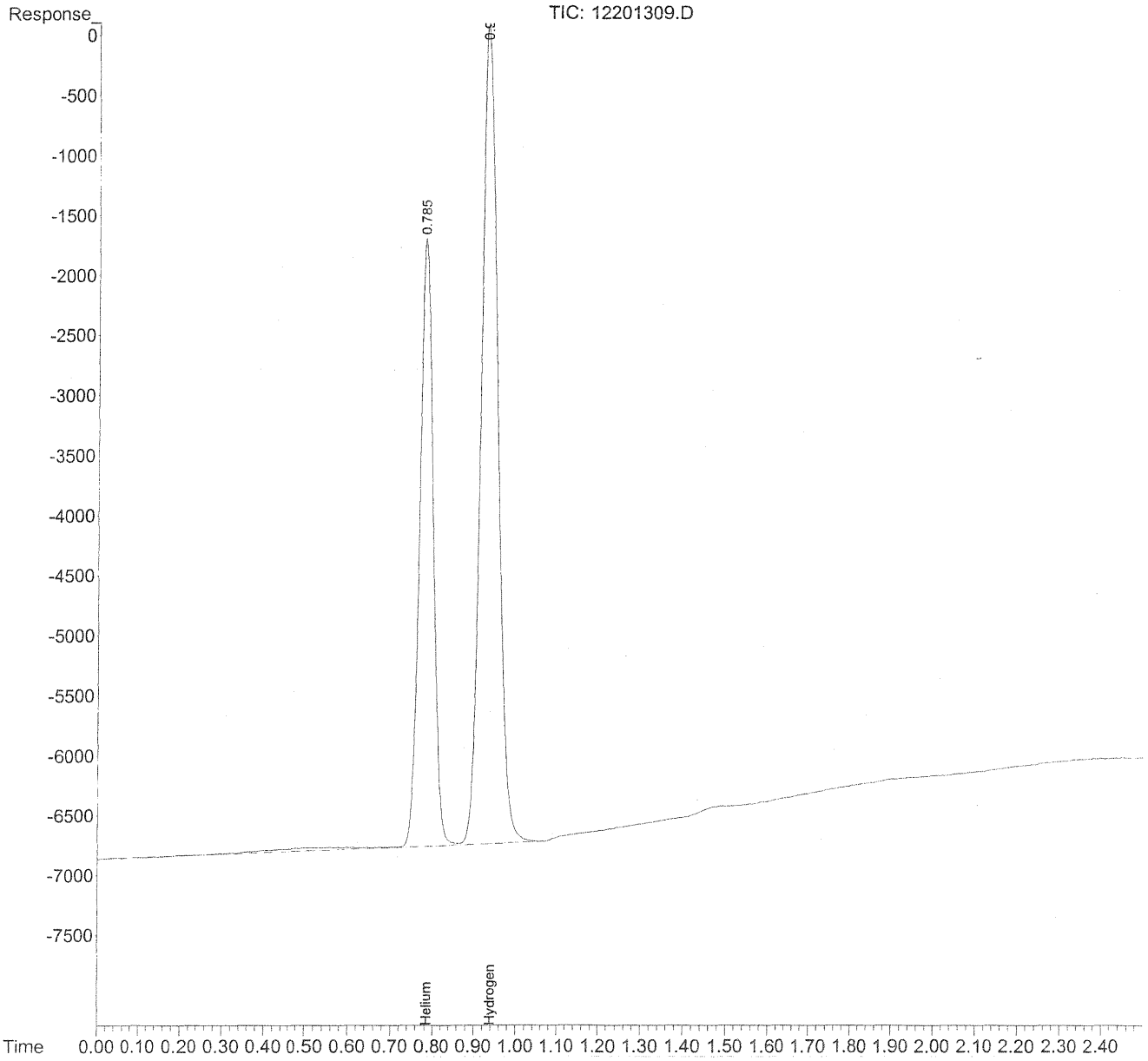
WM 12/21/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201309.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:47:42
Operator : JY
Sample : 1000ppm ICAL Std 0.1ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:41 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201309.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 08:47:42
Operator : JY
Sample : 1000ppm ICAL Std 0.1ml S27-12201301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:31:41 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 08:53:28 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

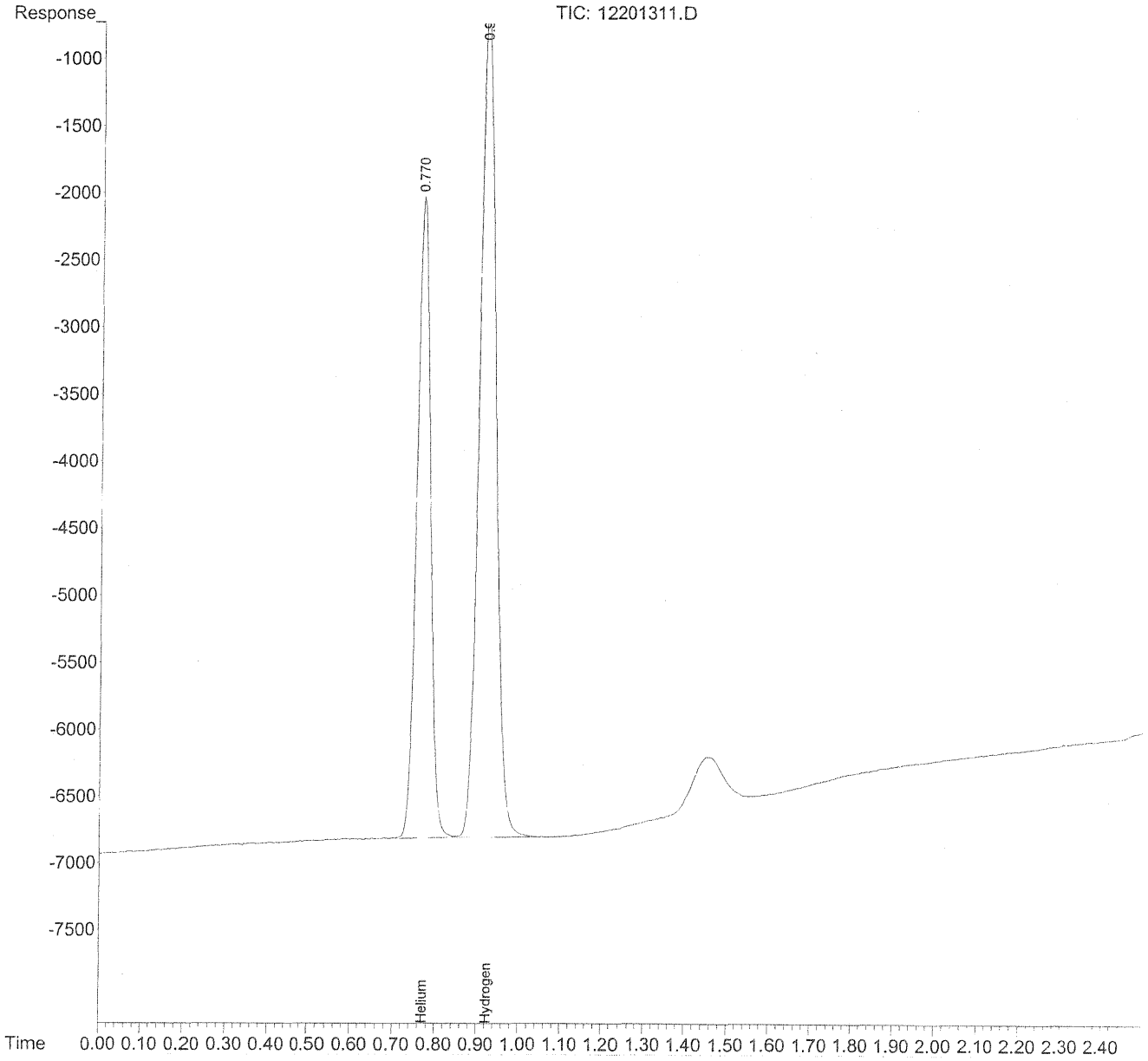
Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Helium	0.786	120831	1155.414	ppm
2) Hydrogen	0.938	192424	1153.159	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:18 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:18 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

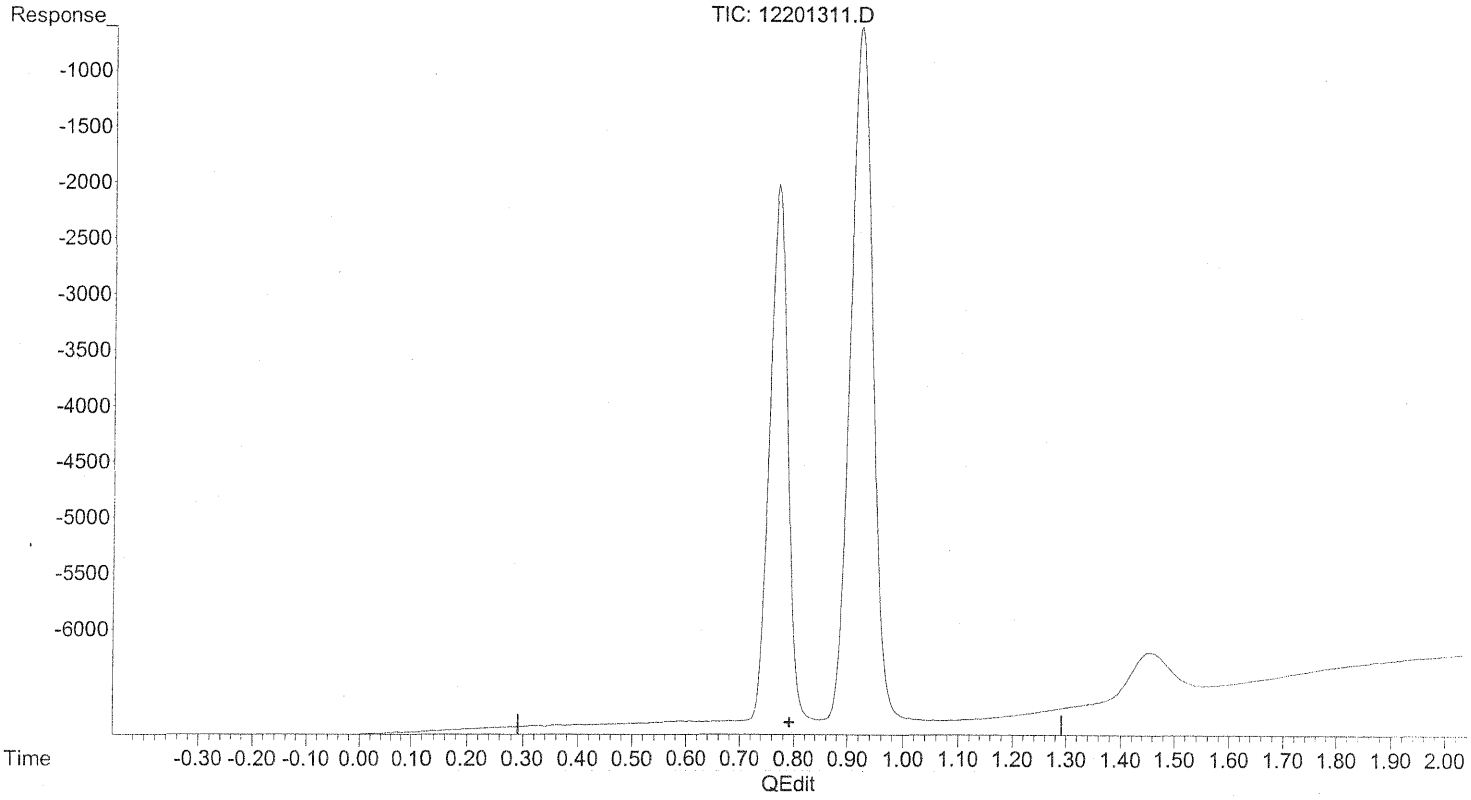
	Compound	R.T.	Response	Conc	Units		% REC
Target Compounds							
1)	Helium	0.770	108038	1047.332	ppm	m	105%
2)	Hydrogen	0.923	171178	1016.420	ppm	m	102%

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:01 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



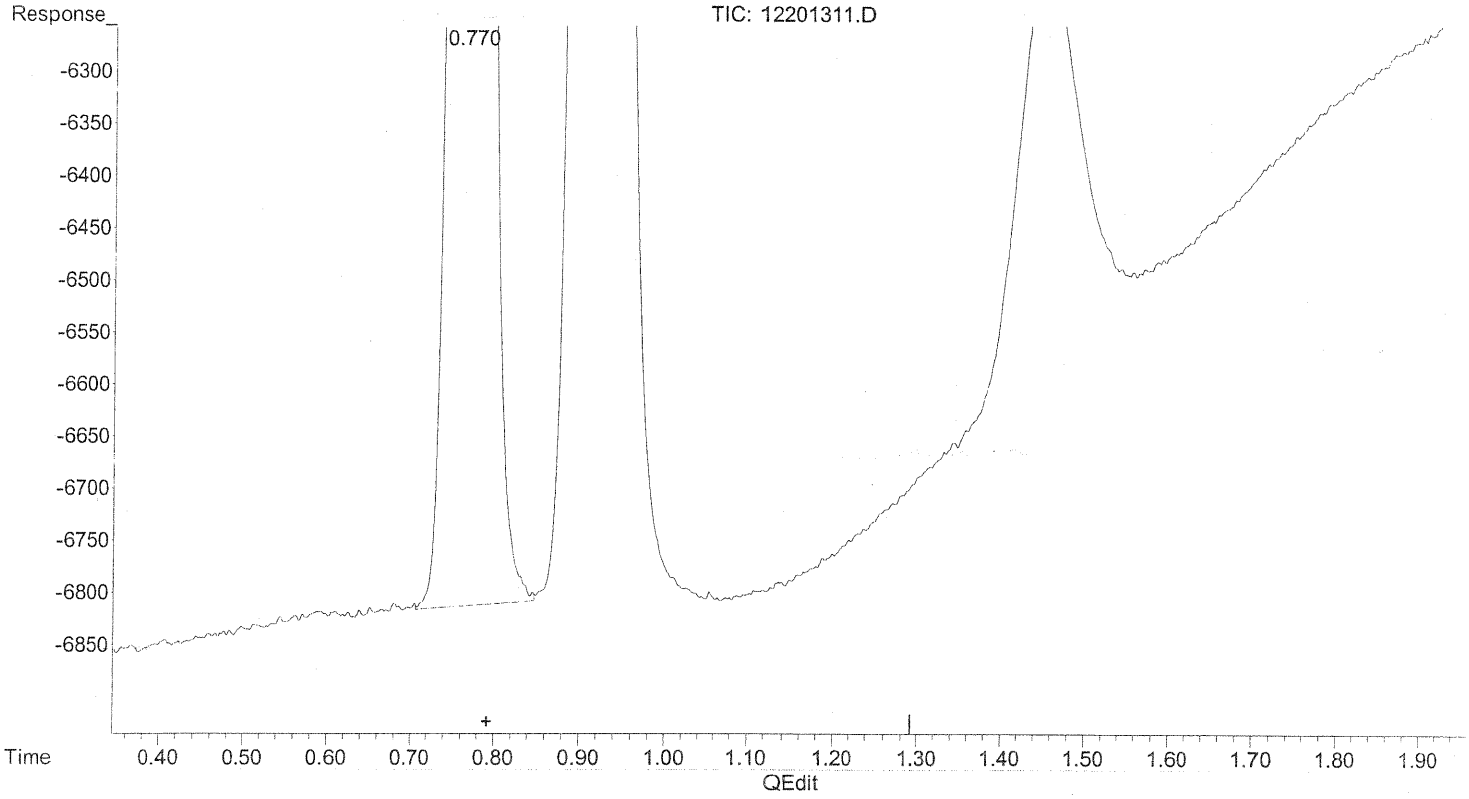
(1) Helium
0.792min 0.000 ppm
response 0

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:01 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.770min 1047.332 ppm m
response 108038

MP
20DEC13

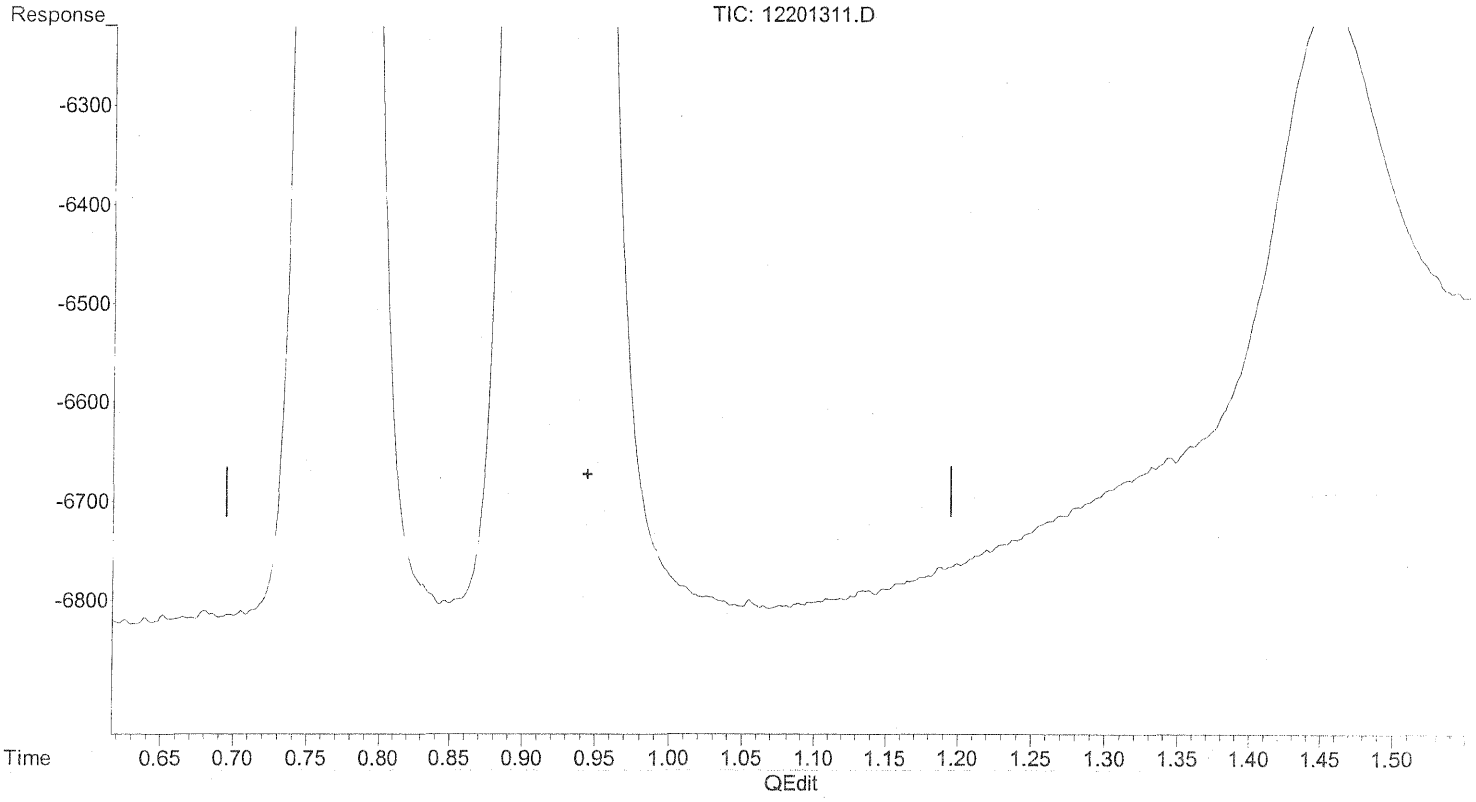
MP 12/21/13

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:01 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



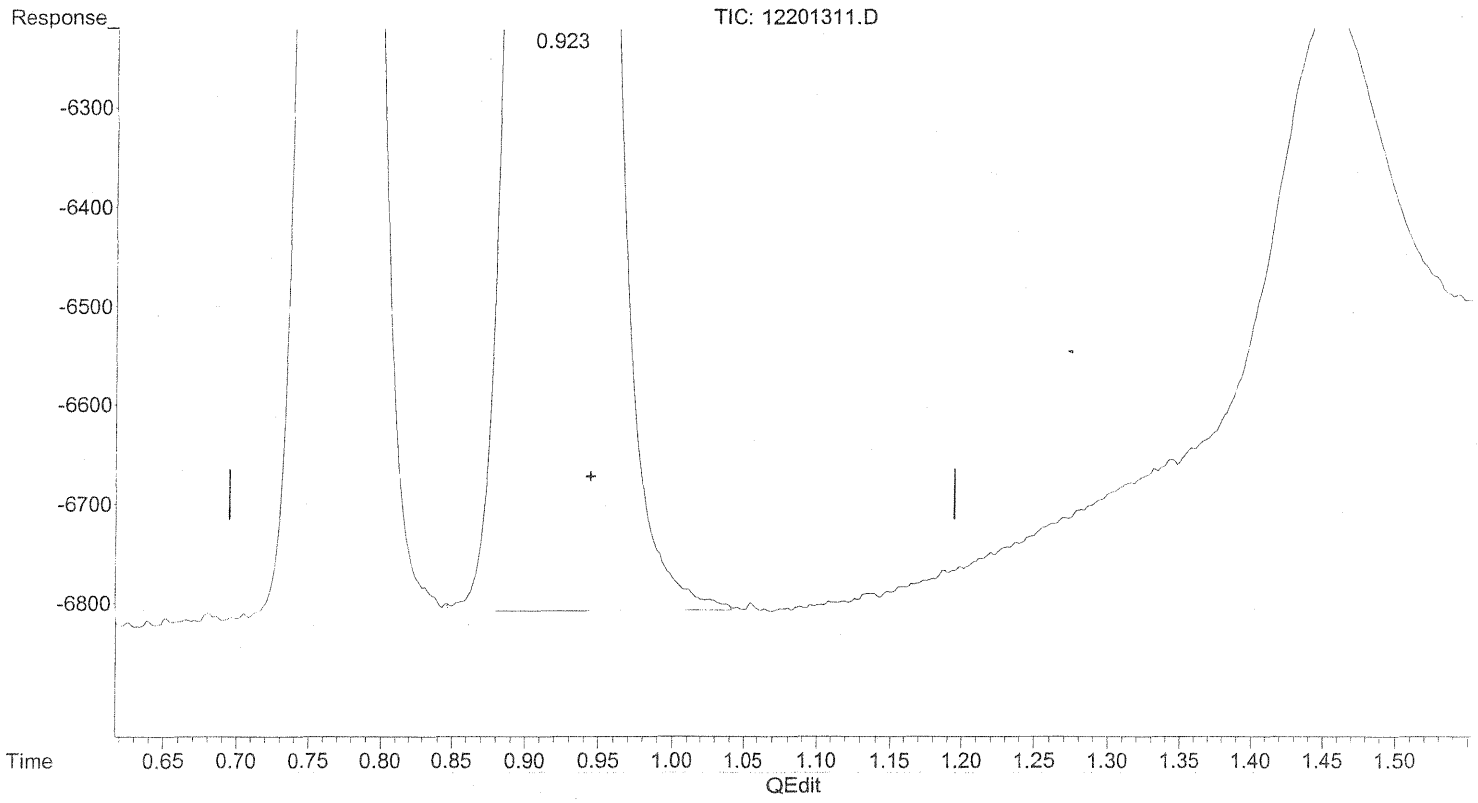
(2) Hydrogen
0.923min 1026.543 ppm
response 172883

(+) = Expected Retention Time

Data Path : I:\GC08\DATA\H2_HE\2013_12\20\
Data File : 12201311.D
Signal(s) : TCD1A.CH
Acq On : 20-Dec-2013, 09:11:31
Operator : JY
Sample : ICV/LCS 1000ppm 0.1ml S27-12201303
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 20 09:38:01 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Hydrogen
0.923min 1016.420 ppm m
response 171178

MP
20DEC13

(+) = Expected Retention Time

ALS Enviromental

REPORT SUMMARY

Method : Helium by modified EPA 3C
Client : trevet P1305675
Analyst : wh

Instrument : Instrument #8 / TCD #8
Date Acquired : 12/30/2013
Sample Amount : 1 mL

Opening CCV[1]

STD S27-12301301		He
Sample result (ppm)	**inj vol.**	10961.76
ACTUAL	0.10	10000.00
%Difference		9.62%

Closing CCV[1]

STD S27-12301301		He
Sample result (ppm)	**inj vol.**	11228.60
ACTUAL	0.10	10000.00
%Difference		12.29%

Laboratory Control Spike[2]

lcs S27-12271301	He
sample result ppm	10883.31
spike amount	10000
% recovery	108.83%

Laboratory Control Spike[2]

lcsd S27-12271301	He
sample result ppm	11099.04
spike amount	10000
% recovery	110.99%
% RPD	1.96%

FINAL SAMPLE RESULT SUMMARIES

Sample ID	Inject. Vol(ml)	Dilution DF	Pi	Pf	PiPf DF	He Result (ppm)	FINAL HELIUM RESULT ppm	FINAL HELIUM RESULT mg/M3	File ID	Acq time
Reporting Limit							25.0	4.09		
MB 1ml	1.000	1.0			1.00	0.00	**ND**	**ND**		
5675-001	1.00	1.0	-2.67	3.66	1.53	1781.79	**2719.342**	**444.989**		
5675-003	1.00	1.0	-2.43	3.74	1.50	49.45	**74.318**	**12.161**		
5675-004	1.00	1.0	-2.43	3.55	1.49	23.56	**ND**	**ND**		
5675-005	1.00	1.0	-2.16	3.53	1.45	0.00	**ND**	**ND**		
5675-006	1.00	1.0	-1.97	3.83	1.46	0.00	**ND**	**ND**		
5675-007	1.00	1.0	-1.97	3.63	1.44	0.00	**ND**	**ND**		

1/2 lot

1. 15% difference allowed for the opening and closing standards.
2. 70-127% recovery for the lab control spike.
3. 23% RPD allowed between duplicate samples.

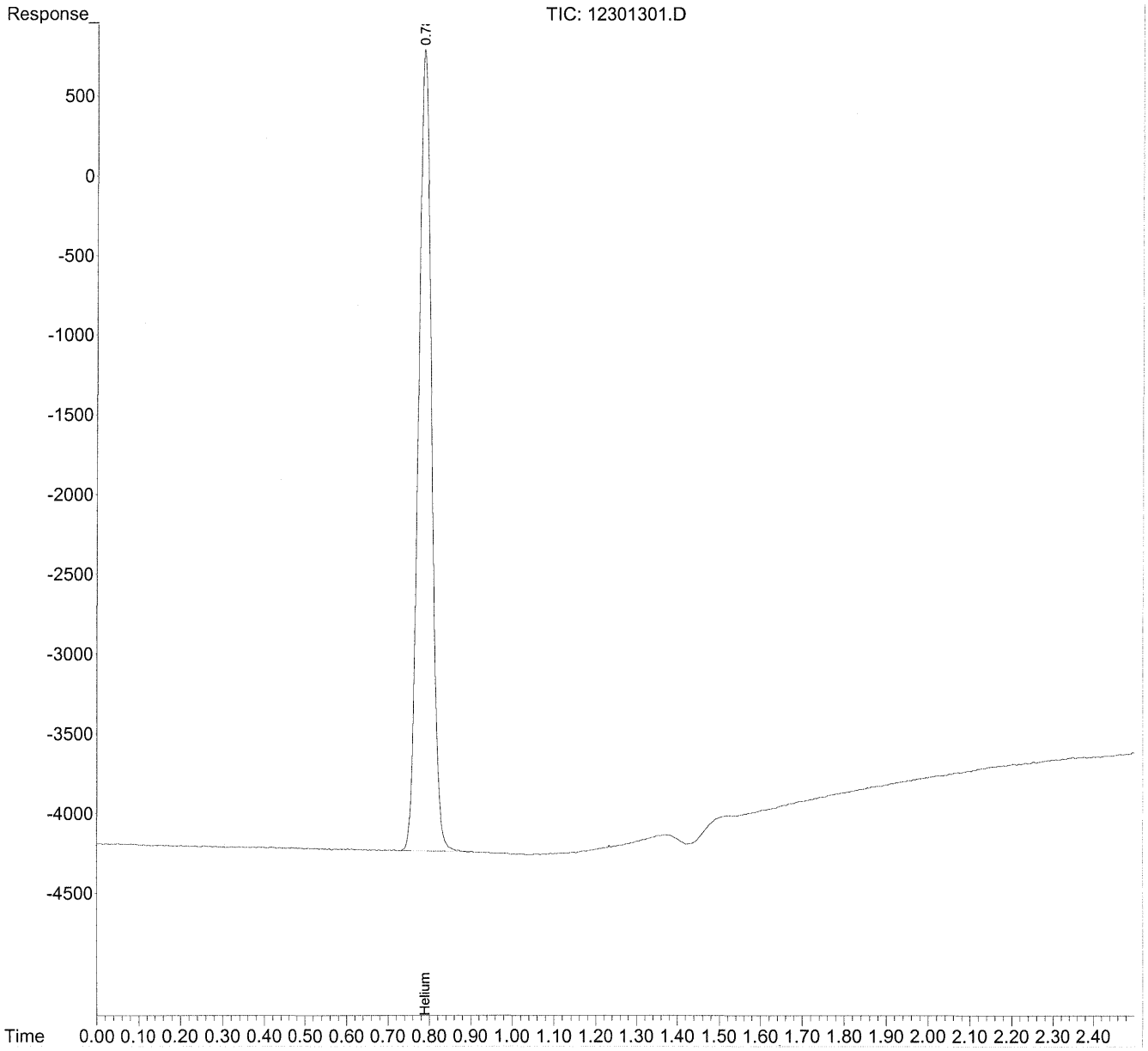
J:\EXCEL\REPORT\helium\2013\p1305675

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301301.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 07:59:35
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:11:01 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Thu Jan 02 15:41:08 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301301.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 07:59:35
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:11:01 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Thu Jan 02 15:41:08 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.789	113077	1096.176	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

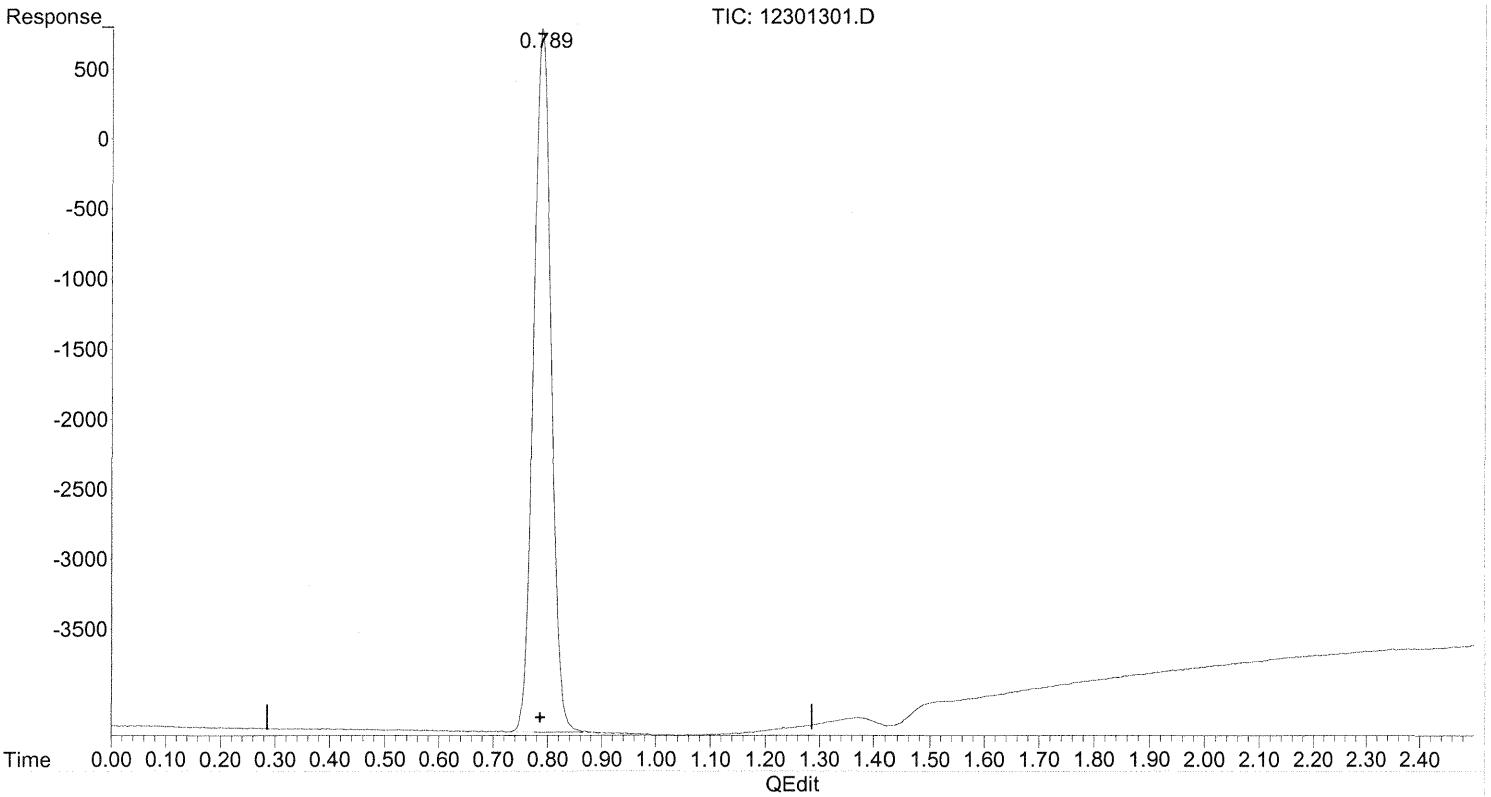
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301301.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 07:59:35
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:10:52 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Thu Jan 02 15:41:08 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.789min 1096.176 ppm m
response 113077

NL 1/13/14

LW 1/21/14

MMP
no previous

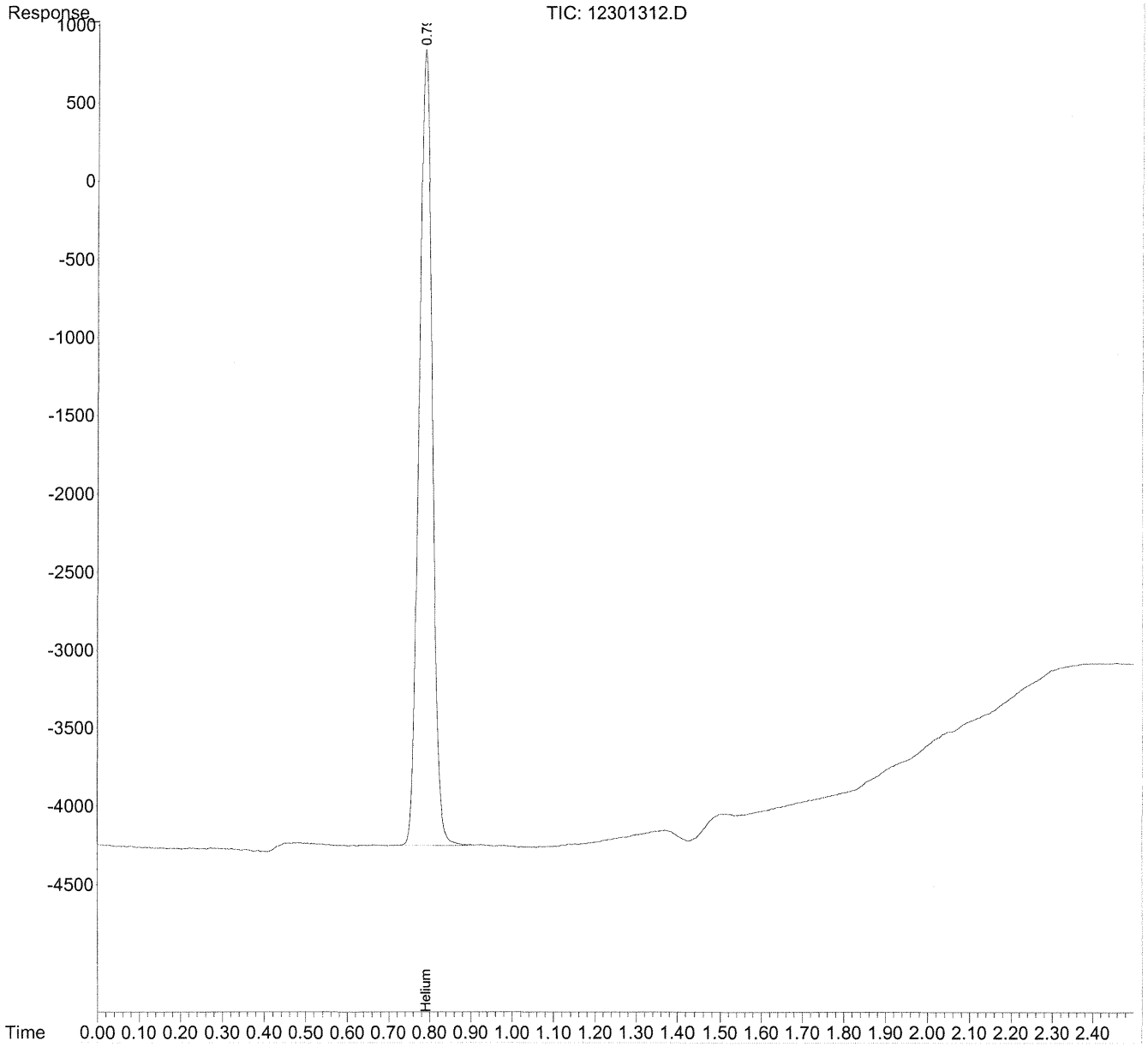
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301312.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:14:21
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:12:00 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301312.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:14:21
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 02 17:12:00 2014
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.790	116559	1129.936	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

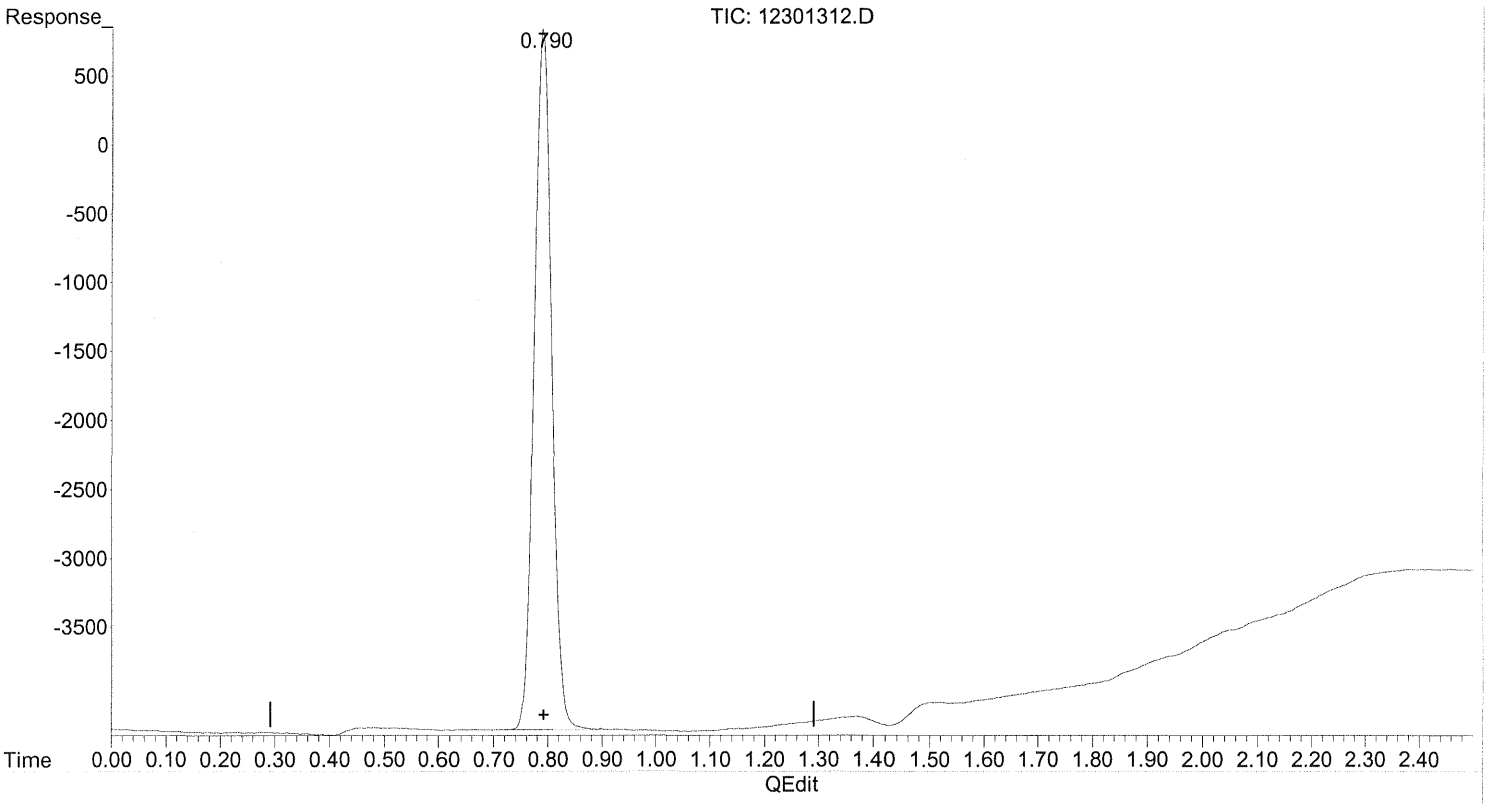
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301312.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 10:14:21
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 10:19:20 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.790min 1129.936 ppm m
response 116559

m 1/4/14

1/2/14

no previous

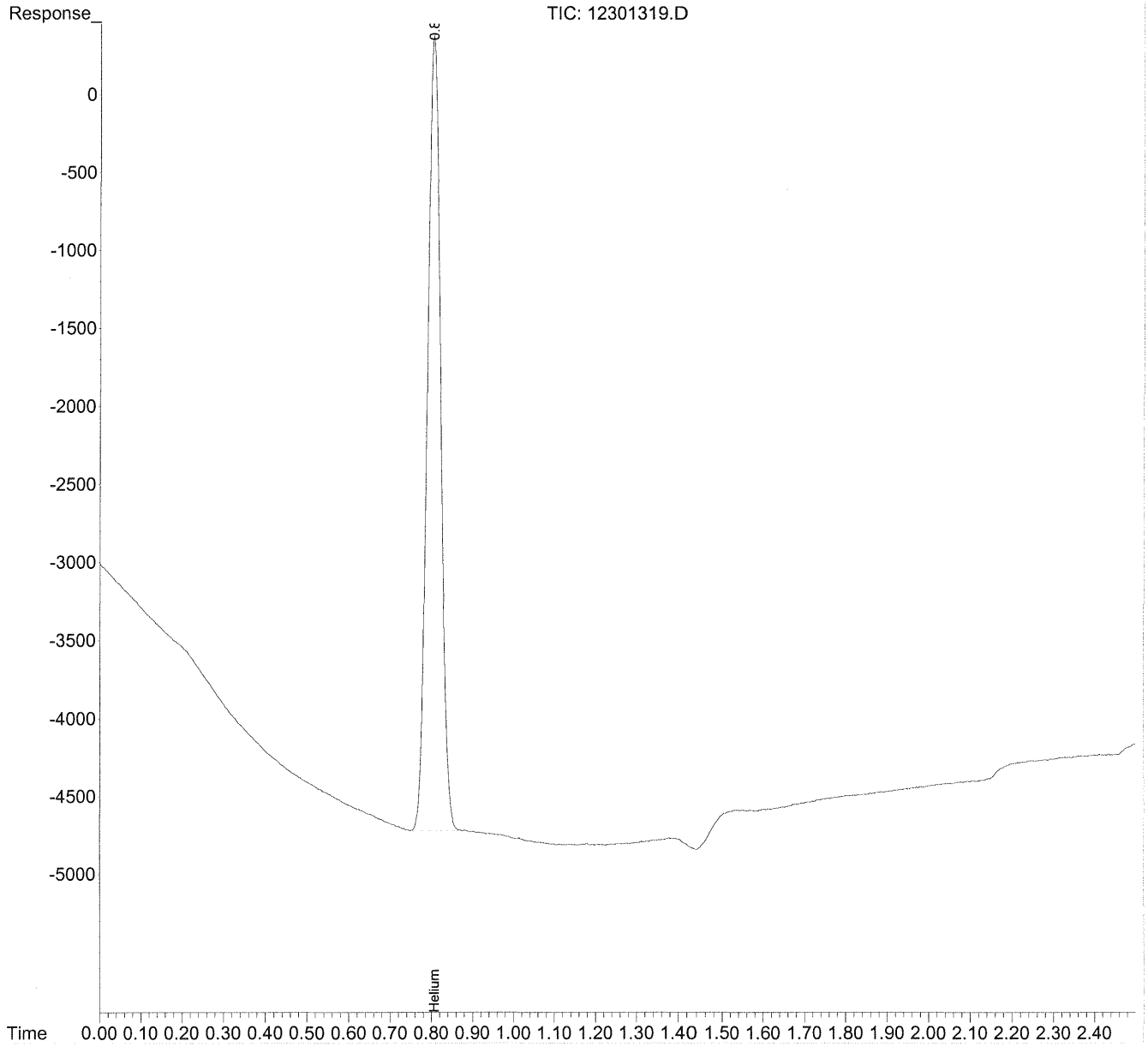
(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301319.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:38:44
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 11:49:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301319.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:38:44
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 11:49:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Helium	0.806	115829	1122.860	ppm	m
2)	Hydrogen	0.000	0	N.D.	ppm	

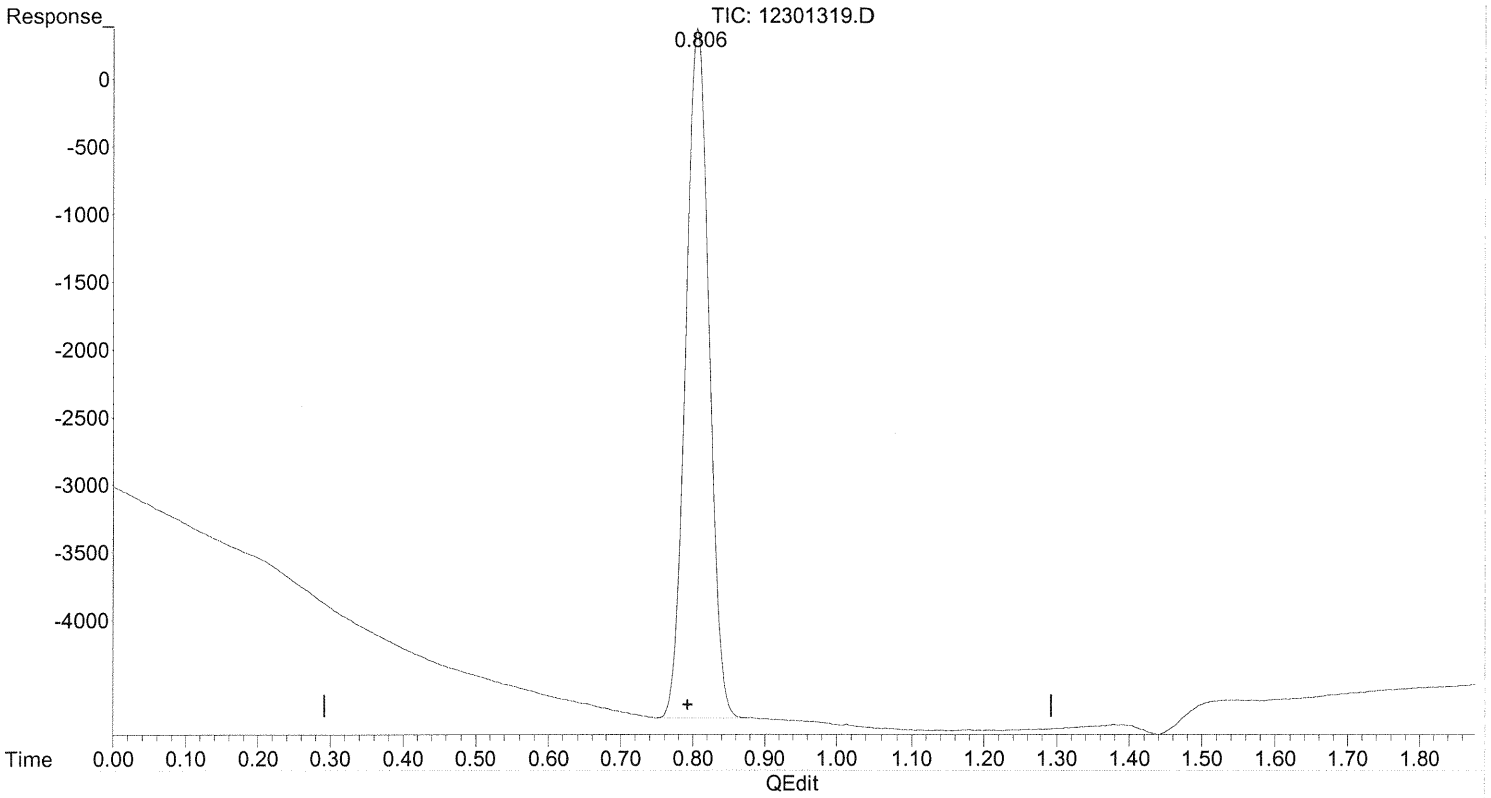
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\H2_HE\2013_12\30\
Data File : 12301319.D
Signal(s) : TCD1A.CH
Acq On : 30-Dec-2013, 11:38:44
Operator : NL
Sample : std s27-12301301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 30 11:49:37 2013
Quant Method : I:\GC08\METHODS\HH122013.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Fri Dec 20 09:37:07 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.806min 1122.860 ppm m
response 115829

m
1/3/14

1/2/14
mp
no previous

(+) = Expected Retention Time

Injection Log

Directory: I:\GC08\DATA\H2_HE\2013_12\20

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	12201301.d	1.	xSTD S27-12201301		20-Dec-2013 19:24
2	1	12201302.d	1.	STD S27-12201301		20-Dec-2013 19:34
3	1	12201303.d	1.	Blank		20-Dec-2013 19:40
4	1	12201304.d	1.	20ppm ICAL Std 0.2ml S27-12...		20-Dec-2013 19:50
5	1	12201305.d	1.	100ppm ICAL Std 1.0ml S27-1...		20-Dec-2013 19:58
6	1	12201306.d	1.	x1000ppm STD	1.0ml S27-12201302	20-Dec-2013 20:06
7	1	12201307.d	1.	5000ppm ICAL Std 0.5ml S27-...		20-Dec-2013 20:17
8	1	12201308.d	1.	10000ppm ICAL Std 1.0ml S27...		20-Dec-2013 20:28
9	1	12201309.d	1.	1000ppm ICAL Std 0.1ml S27-...		20-Dec-2013 20:47
10	1	12201310.d	1.	MB 1ml		20-Dec-2013 20:54
11	1	12201311.d	1.	ICV/LCS 1000ppm 0.1ml S27-1...		20-Dec-2013 21:11
12	1	12201312.d	1.	LCSD 1000ppm 0.1ml S27-1220...		20-Dec-2013 21:29
13	1	12201313.d	1.	5551-001 1ml		20-Dec-2013 21:39

Injection Log

Directory: J:\GC08\DATA\H2_HE\2013_12\30

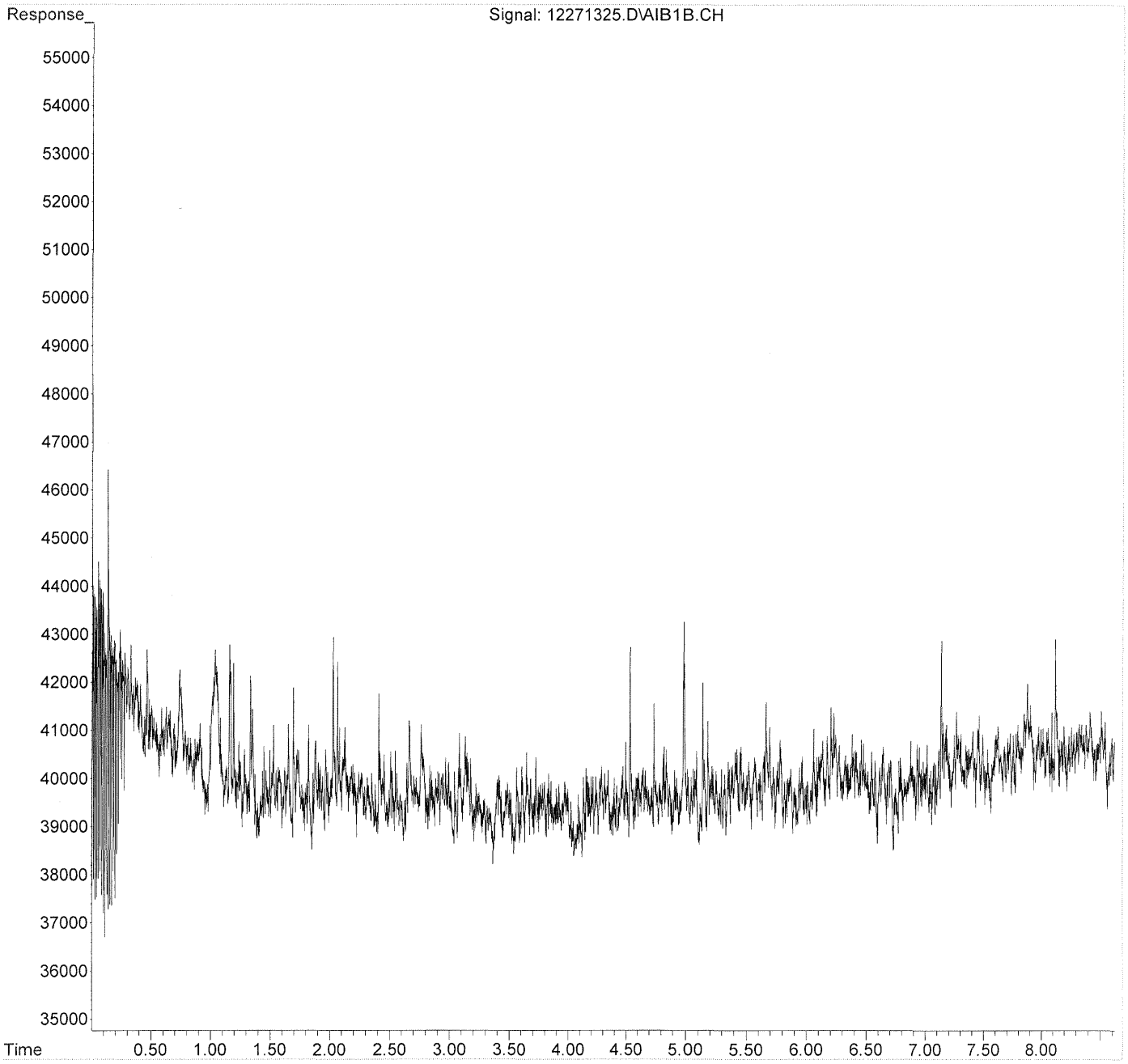
Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	12301301.d	1.	std s27-12301301		30-Dec-2013 19:59
2	1	12301302.d	1.	mb		30-Dec-2013 20:20
3	1	12301303.d	1.	LCS S27-12271301		30-Dec-2013 20:30
4	1	12301304.d	1.	LCSD S27-1227130		30-Dec-2013 20:39
5	1	12301305.d	1.	5689-001 1ml		30-Dec-2013 20:46
6	1	12301306.d	1.	5689-002 1ml		30-Dec-2013 21:03
7	1	12301307.d	1.	5689-003 1ml		30-Dec-2013 21:09
8	1	12301308.d	1.	5689-004 1ml		30-Dec-2013 21:21
9	1	12301309.d	1.	5689-005 1ml		30-Dec-2013 21:27
10	1	12301310.d	1.	5689-006 1ml		30-Dec-2013 21:39
11	1	12301311.d	1.	5689-007 1ml		30-Dec-2013 22:03
12	1	12301312.d	1.	std s27-12301301		30-Dec-2013 22:14
13	1	12301313.d	1.	5675-001 1ml		30-Dec-2013 22:22
14	1	12301314.d	1.	5675-003 1ml		30-Dec-2013 22:38
15	1	12301315.d	1.	5675-004 1ml		30-Dec-2013 23:01
16	1	12301316.d	1.	5675-005 1ml		30-Dec-2013 23:11
17	1	12301317.d	1.	5675-006 1ml		30-Dec-2013 23:20
18	1	12301318.d	1.	5675-007 1ml		30-Dec-2013 23:29
19	1	12301319.d	1.	std s27-12301301		30-Dec-2013 23:38

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271325.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 2:46 pm
Operator : MC
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:47:40 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271325.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 2:46 pm
Operator : MC
Sample : 5675-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:47:40 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

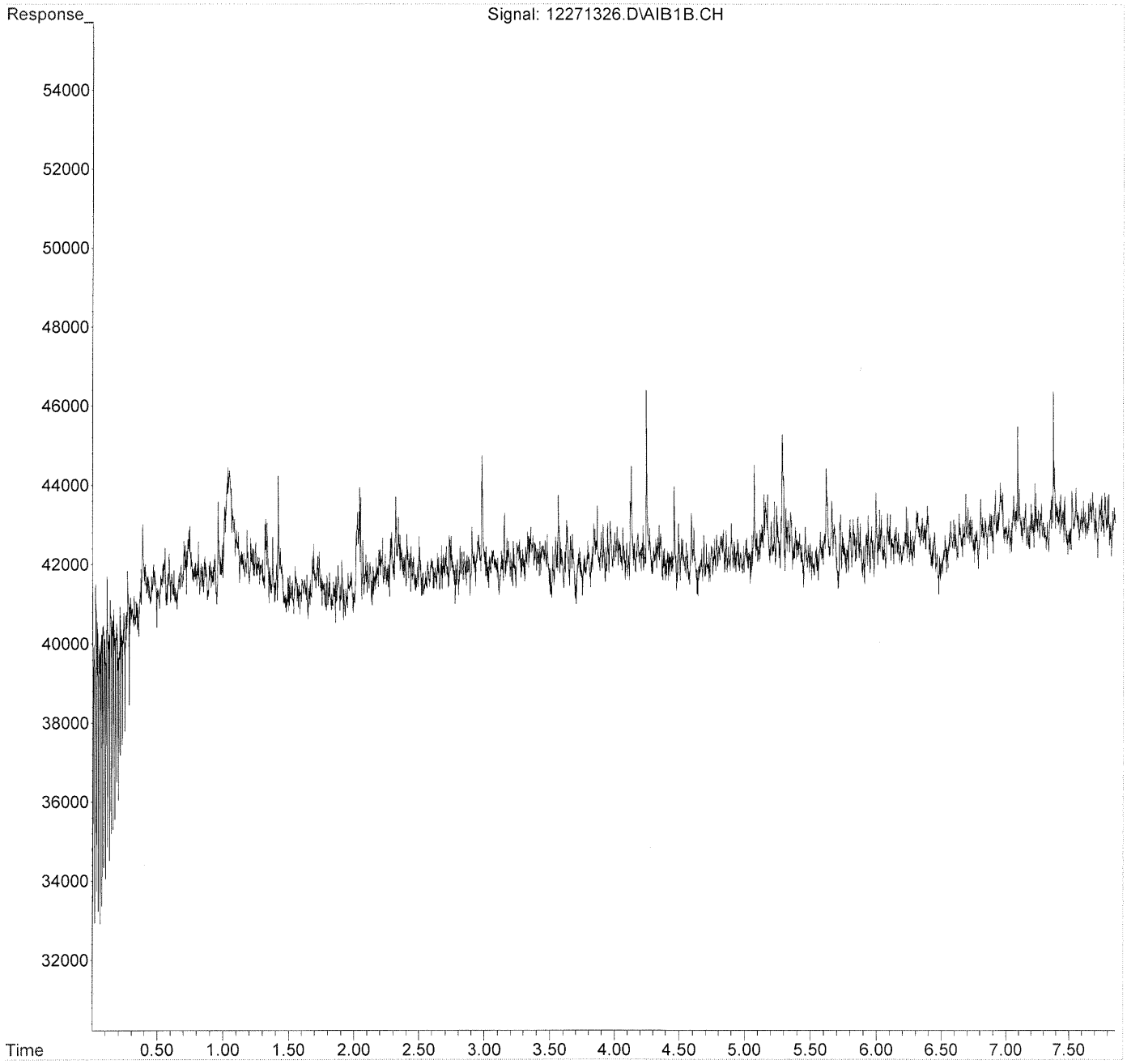
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271326.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 2:57 pm
Operator : MC
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:48:22 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271326.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 2:57 pm
Operator : MC
Sample : 5675-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:48:22 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

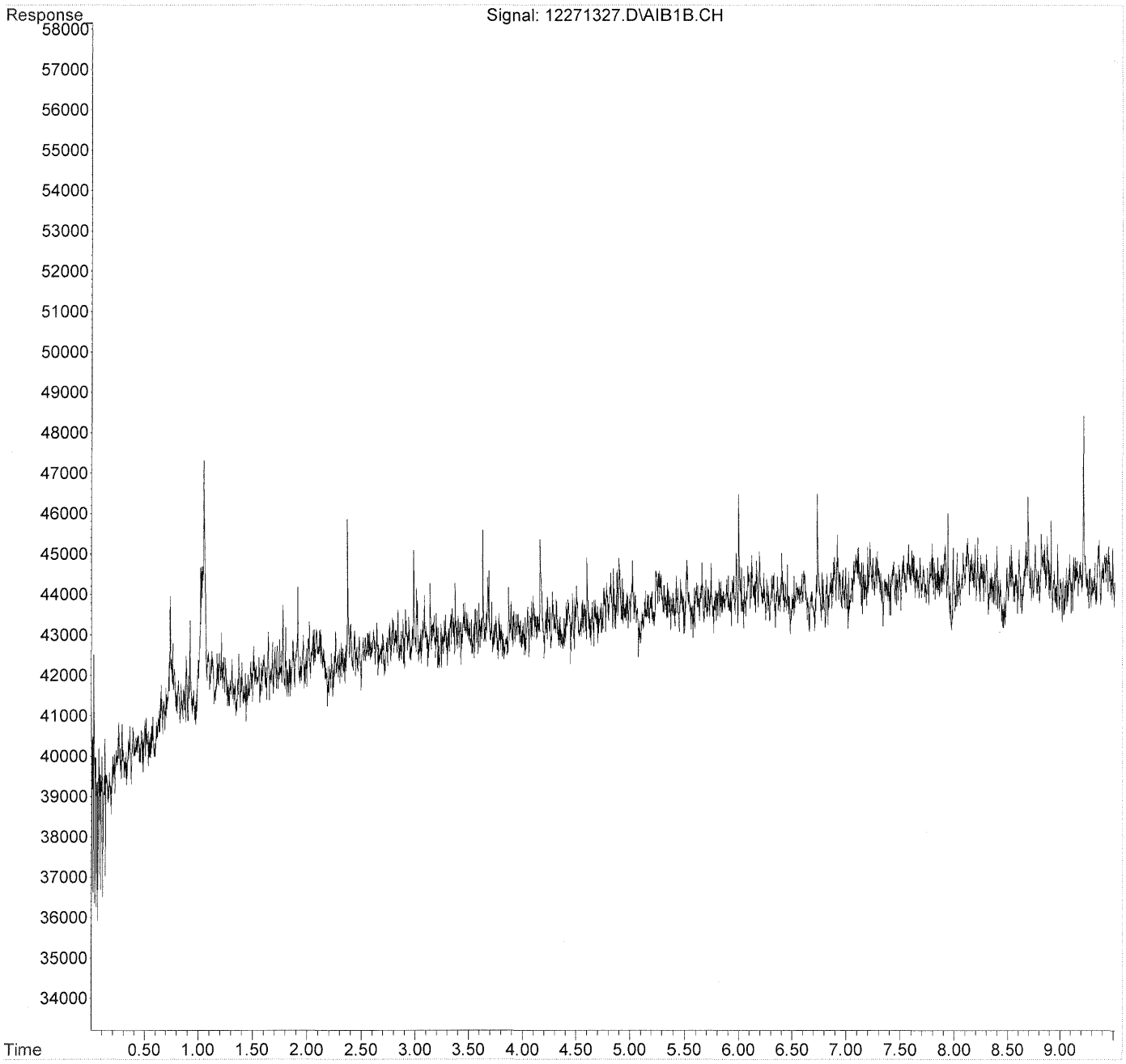
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271327.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:07 pm
Operator : MC
Sample : 5675-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:48:43 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271327.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:07 pm
Operator : MC
Sample : 5675-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:48:43 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

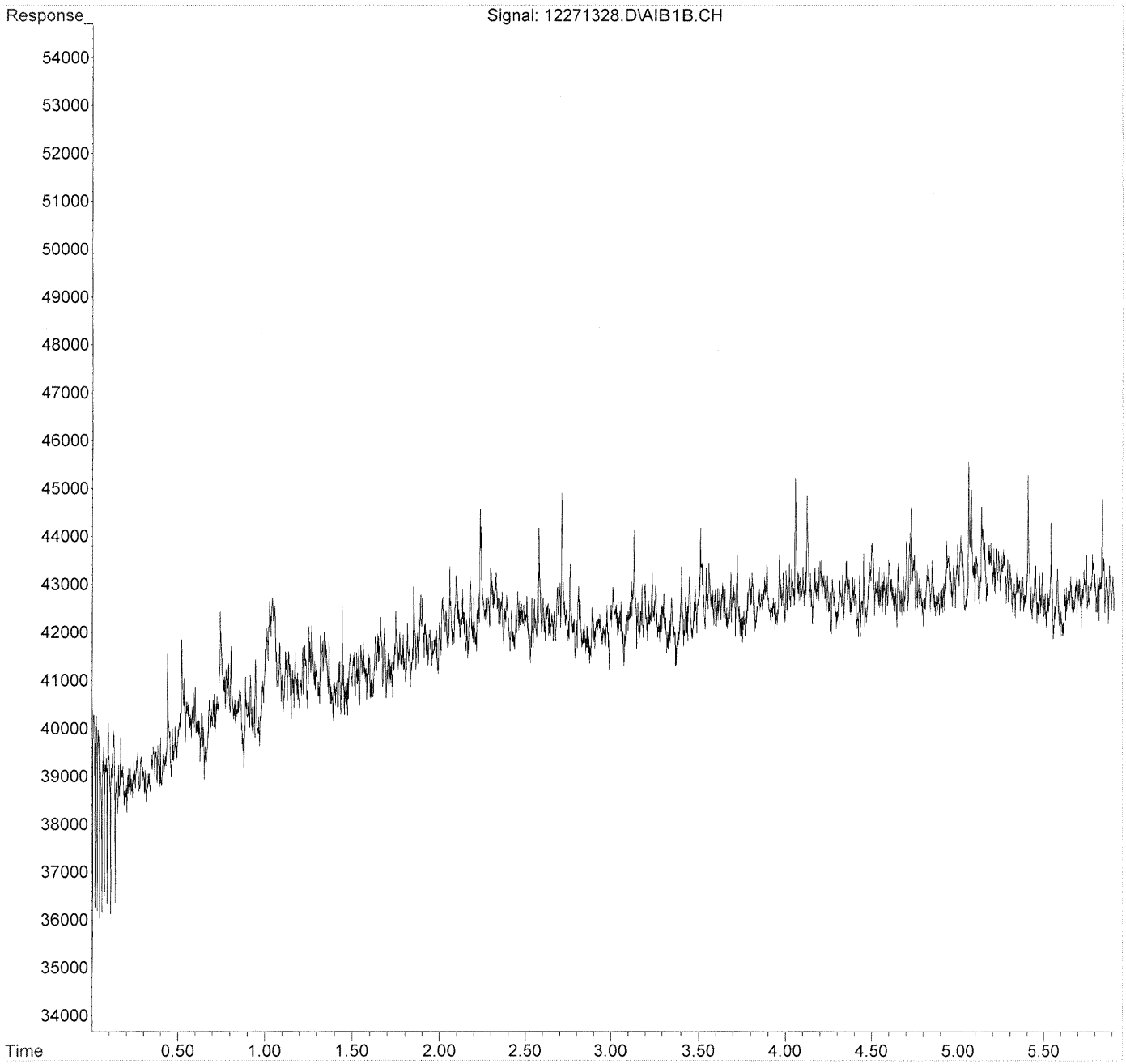
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271328.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:19 pm
Operator : MC
Sample : 5675-006 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:49:06 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271328.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:19 pm
Operator : MC
Sample : 5675-006 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:49:06 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

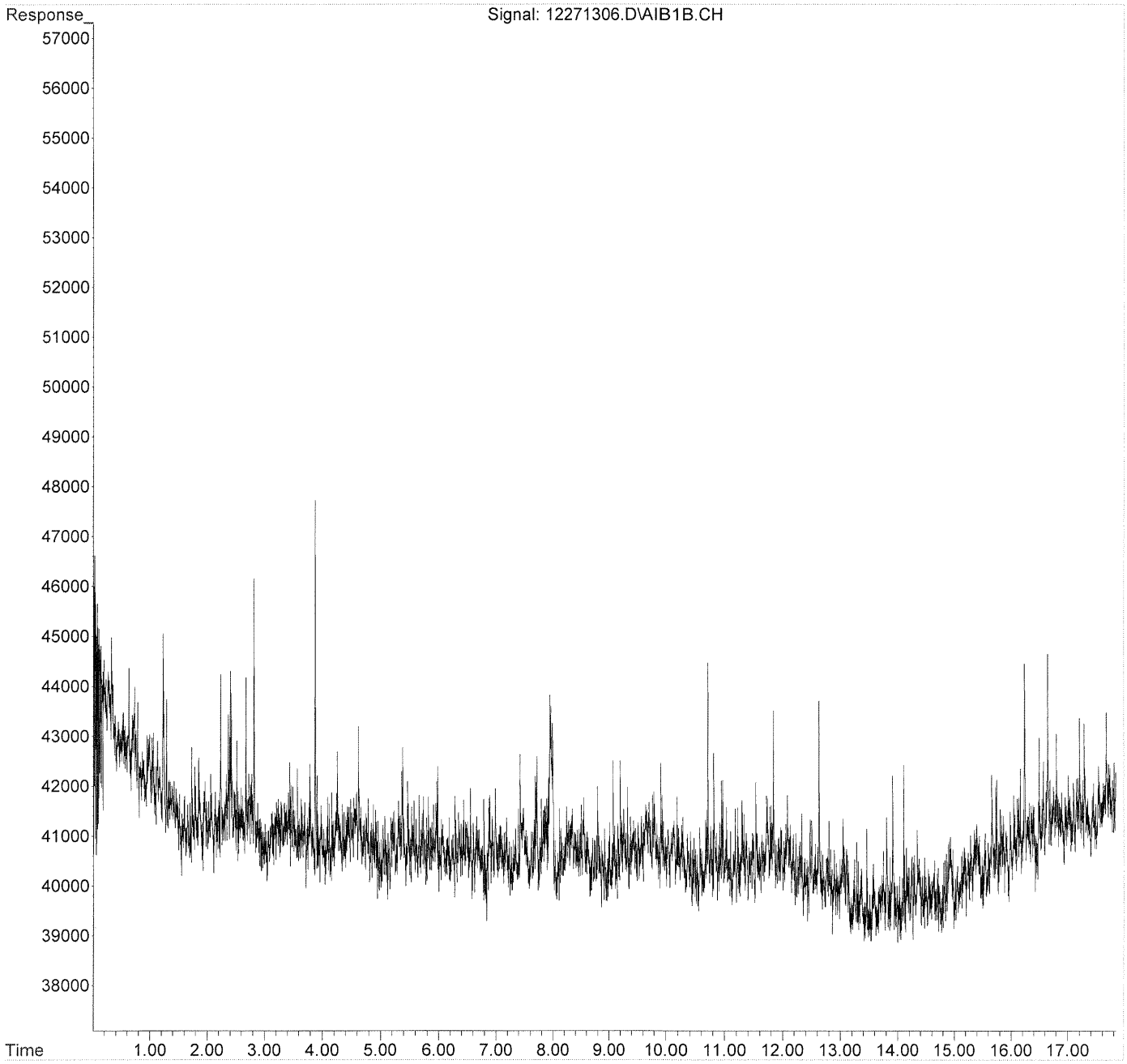
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271306.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:31 am
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:46:59 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271306.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:31 am
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:46:59 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

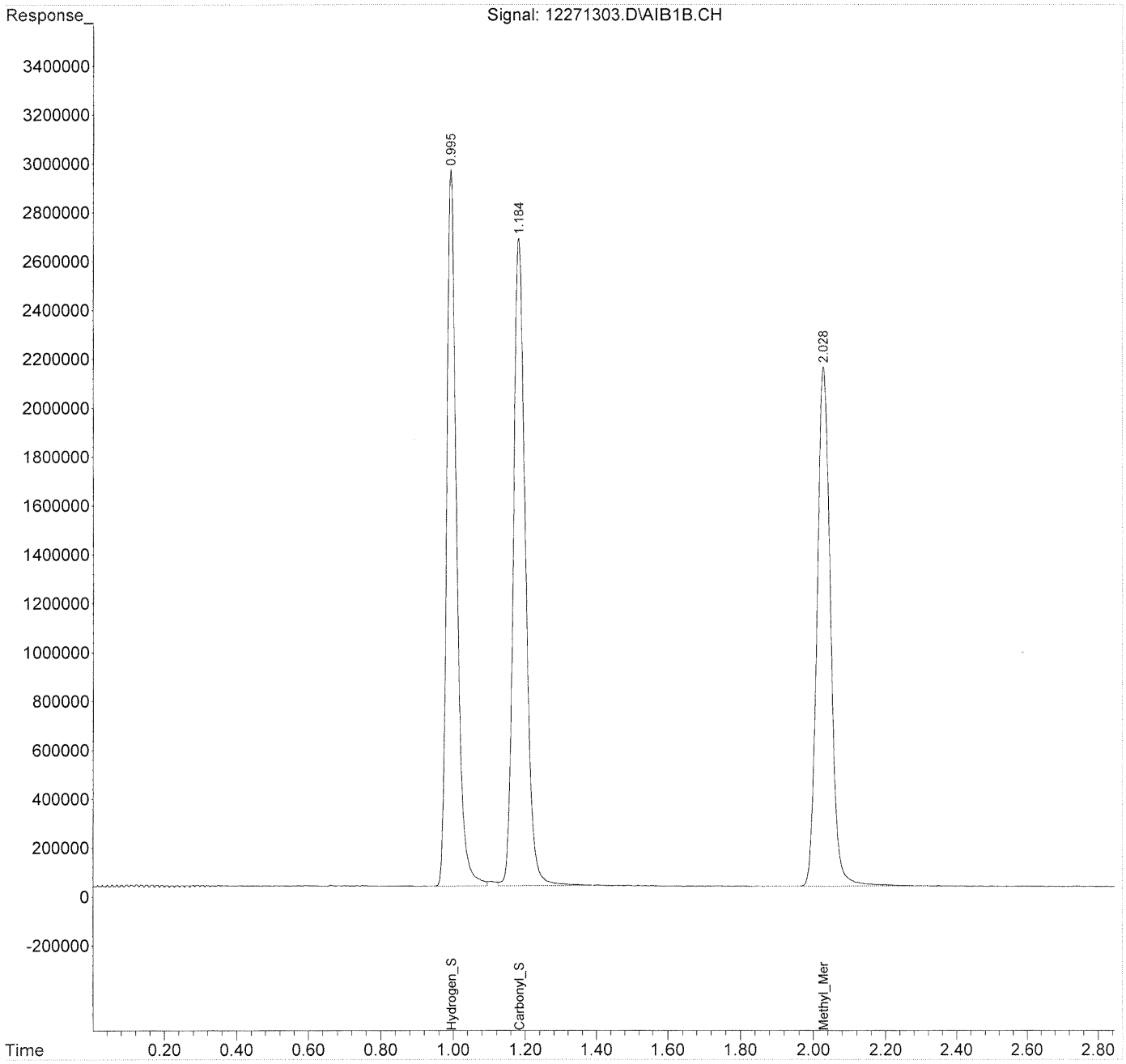
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271303.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 7:59 am
Operator : MC
Sample : lcs 2000ppb s27-12091302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:45:11 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271303.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 7:59 am
Operator : MC
Sample : lcs 2000ppb s27-12091302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:45:11 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.996	56405304	1922.000	ppb
2)	W	Carbonyl_Sulfide	1.185	61929937	1861.228	ppb
3)	T	Methyl_Mercaptan	2.028	54847423	1953.690	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

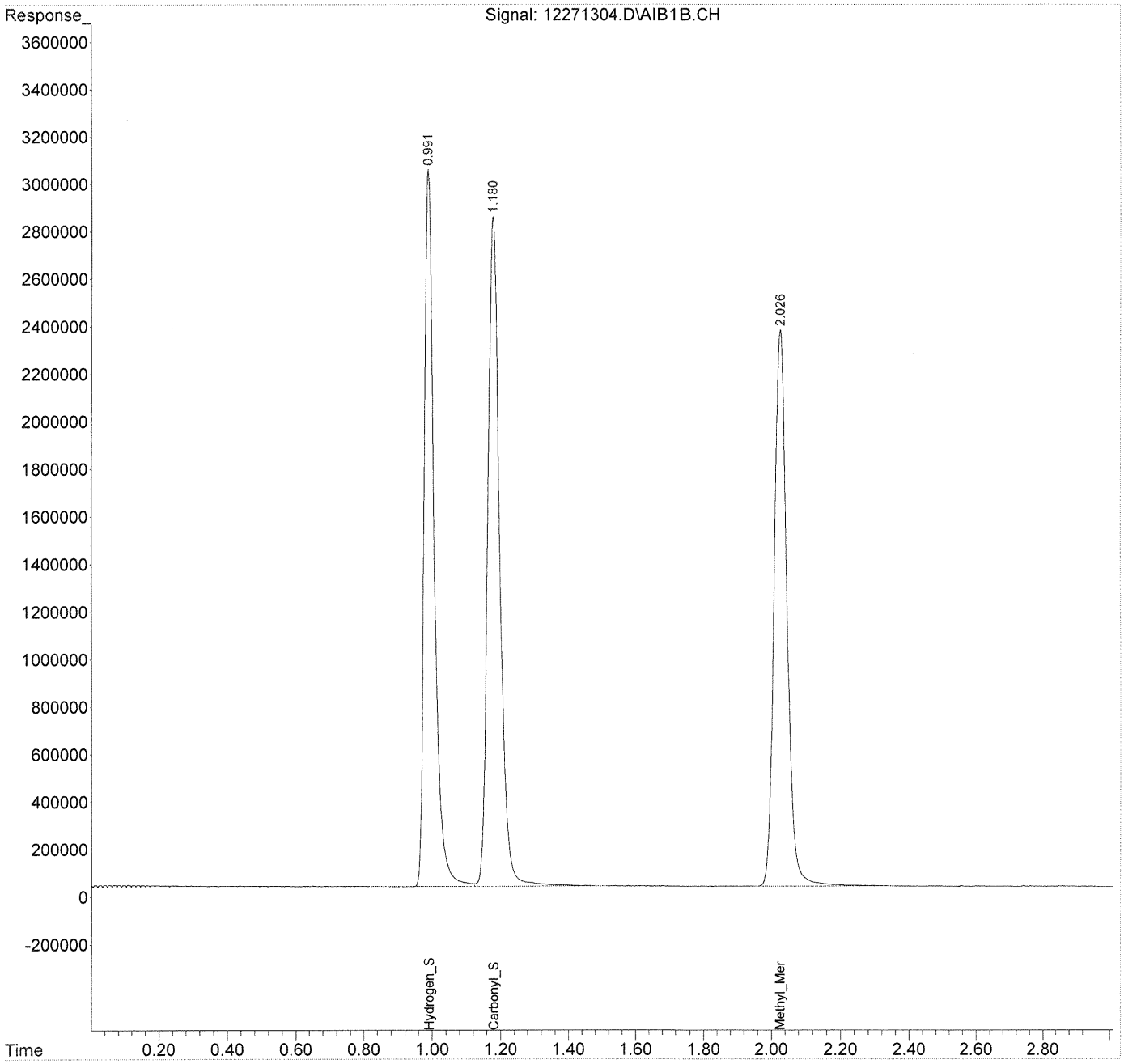
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271304.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:03 am
Operator : MC
Sample : lcsd 2000ppb s27-12091302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 09 09:37:29 2014
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271304.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:03 am
Operator : MC
Sample : lcsd 2000ppb s27-12091302
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jan 09 09:37:29 2014
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.992	60739188	2069.676	ppb
2)	W	Carbonyl_Sulfide	1.181	67868017	2039.689	ppb
3)	T	Methyl_Mercaptan	2.026	61347474	2185.225	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Response Factor Report HP G1530A

Method Path : J:\GC13\METHODS\
Method File : GC13061113.M
Title : 20 Sulfurs
Last Update : Tue Jun 11 17:34:05 2013
Response Via : Initial Calibration

Calibration Files
1 =06111306.D 2 =06111307.D 3 =06111308.D
4 =06111312.D 5 =06111310.D 6 =06111311.D

		Compound	1	2	3	4	5	6	Avg		%RSD
1)	Z	Hydrogen_Sulfide	2.473	3.028	3.482	2.777	2.865	2.984	2.935	E4	11.33
2)	W	Carbonyl_Sulfide	3.589	3.239	3.934	3.025	3.160	3.016	3.327	E4	10.92
3)	T	Methyl_Mercaptan	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
4)	T	Ethyl_Mercaptan	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
5)	T	Dimethyl_Sulfide	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
6)	T	Carbon_Disulfide	5.465	5.349	6.676	5.251	5.485	5.463	5.615	E4	9.39
7)	T	2-Propyl_Merc...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
8)	T	t-Butyl_Merca...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
9)	T	Propyl_Mercaptan	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
10)	T	Ethyl_Methyl_...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
11)	T	Thiophene	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
12)	T	i-Butyl_Merca...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
13)	T	Diethyl_Sulfide	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
14)		n-Butyl_Merca...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
15)		Dimethyl_Disu...	5.465	5.349	6.676	5.251	5.485	5.463	5.615	E4	9.39
16)	T	2-Methyl_Thio...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
17)		3-Methyl_Thio...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
18)	T	Tetrahydrothi...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
19)		2,5-Dimethyl_...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
20)	T	2-Ethyl_Thiop...	2.733	2.674	3.338	2.626	2.743	2.731	2.807	E4	9.39
21)	T	Diethyl_Disul...	5.465	5.349	6.676	5.251	5.485	5.463	5.615	E4	9.39
22)	T	Methyltrisulfide	0.820	0.802	1.001	0.788	0.823	0.819	0.842	E5	9.39

(#) = Out of Range

GC13061113.M Tue Jun 11 17:57:05 2013

Method Path : J:\GC13\METHODS\
Method File : GC13061113.M
Title : 20 Sulfurs
Last Update : Tue Jun 11 17:34:05 2013
Response Via : Initial Calibration

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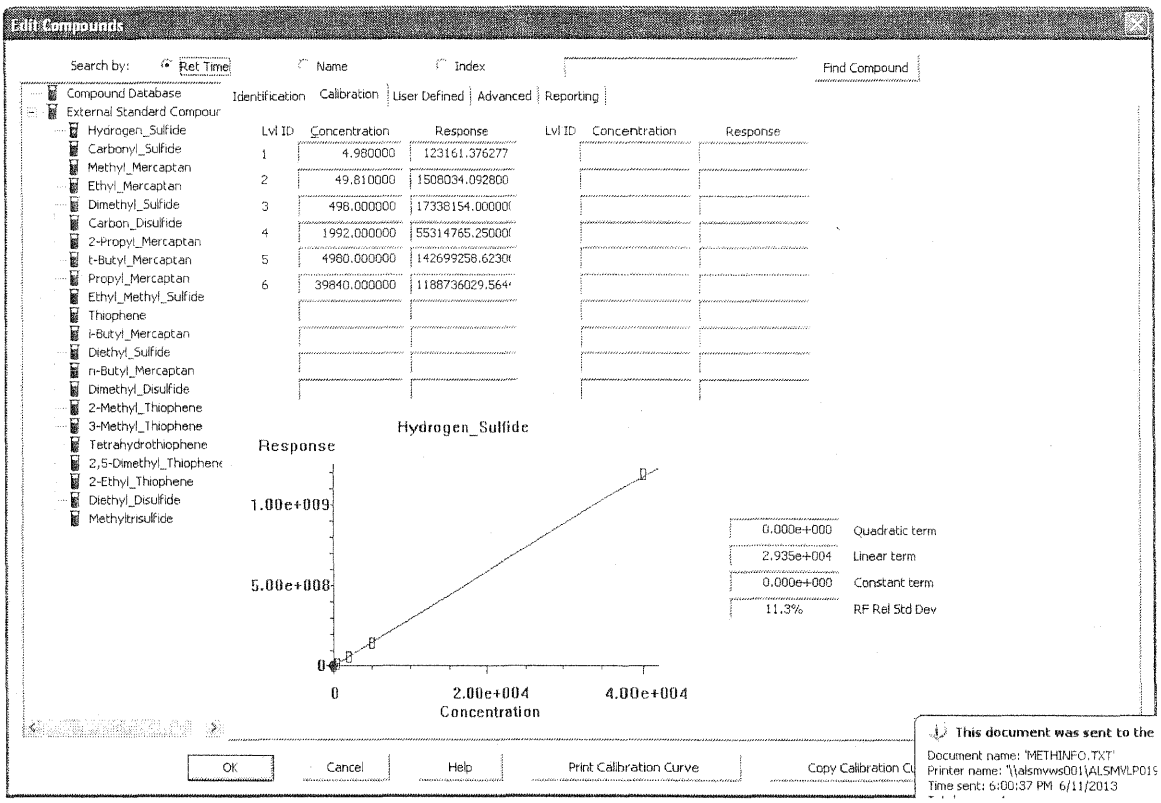
1	1	2	0	J:\GC13\DATA\SCD\2013_06\11\06111306.D
2	2	17	0	J:\GC13\DATA\SCD\2013_06\11\06111307.D
3	3	169	0	J:\GC13\DATA\SCD\2013_06\11\06111308.D
4	4	674	0	J:\GC13\DATA\SCD\2013_06\11\06111312.D
5	5	1685	0	J:\GC13\DATA\SCD\2013_06\11\06111310.D
6	6	13480	0	J:\GC13\DATA\SCD\2013_06\11\06111311.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Jun 11 16:23 2013	Jun 11 15:24 2013	11 Jun 2013 15:20
2	2	Jun 11 16:24 2013	Jun 11 15:31 2013	11 Jun 2013 15:27
3	3	Jun 11 16:24 2013	Jun 11 15:35 2013	11 Jun 2013 15:32
4	4	Jun 11 16:24 2013	Jun 11 16:00 2013	11 Jun 2013 15:57
5	5	Jun 11 16:25 2013	Jun 11 15:43 2013	11 Jun 2013 15:40
6	6	Jun 11 16:25 2013	Jun 11 15:56 2013	11 Jun 2013 15:53

GC13061113.M Tue Jun 11 18:00:29 2013


Edit Compounds
Search by: Ret Time Name Index
Find Compound
Compound Database
External Standard Compour
Hydrogen_Sulfide
Carbonyl_Sulfide
Methyl_Mercaptan
Ethyl_Mercaptan
Dimethyl_Sulfide
Carbon_Disulfide
2-Propyl_Mercaptan
t-Butyl_Mercaptan
Propyl_Mercaptan
Ethyl_Methyl_Sulfide
Thiophene
i-Butyl_Mercaptan
Diethyl_Sulfide
n-Butyl_Mercaptan
Dimethyl_Disulfide
2-Methyl_Thiophene
3-Methyl_Thiophene
Tetrahydrothiophene
2,5-Dimethyl_Thiophene
2-Ethyl_Thiophene
Diethyl_Disulfide
Methyltrisulfide
Identification Calibration User Defined Advanced Reporting
Lvl ID Concentration Response Lvl ID Concentration Response
1 4.980000 123161.376277
2 49.810000 1508034.092800
3 498.000000 17338154.00000
4 1992.000000 55314765.25000
5 4980.000000 142699258.6230
6 39840.000000 1188736029.564
Hydrogen_Sulfide
Response
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5.00e+008
0
0
2.00e+004
4.00e+004
Concentration
0.000e+000 Quadratic term
2.935e+004 Linear term
0.000e+000 Constant term
11.3% RF Rel Std Dev
OK
Cancel
Help
Print Calibration Curve
Copy Calibration Cu
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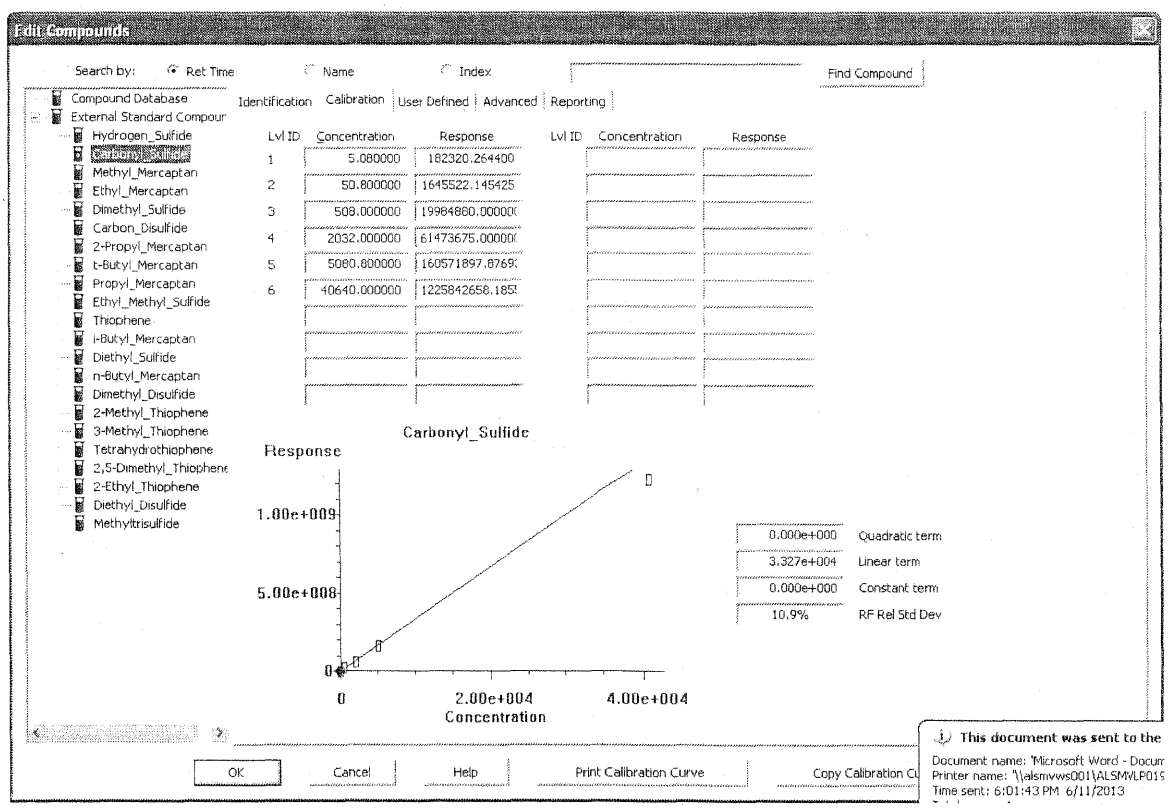
Time sent: 6:00:37 PM 6/11/2013


Edit Compounds
Search by: Ret Time Name Index
Find Compound
Compound Database
External Standard Compour
Hydrogen_Sulfide
Carbonyl_Sulfide
Methyl_Mercaptan
Ethyl_Mercaptan
Dimethyl_Sulfide
Carbon_Disulfide
2-Propyl_Mercaptan
t-Butyl_Mercaptan
Propyl_Mercaptan
Ethyl_Methyl_Sulfide
Thiophene
i-Butyl_Mercaptan
Diethyl_Sulfide
n-Butyl_Mercaptan
Dimethyl_Disulfide
2-Methyl_Thiophene
3-Methyl_Thiophene
Tetrahydrothiophene
2,5-Dimethyl_Thiophene
2-Ethyl_Thiophene
Diethyl_Disulfide
Methyltrisulfide
Identification Calibration User Defined Advanced Reporting
Lvl ID Concentration Response Lvl ID Concentration Response
1 5.080000 182320.264400
2 50.800000 1645522.145425
3 508.000000 19984860.000000
4 2032.000000 61473675.000000
5 5080.000000 1605718897.8769
6 40640.000000 1225842658.1859
Carbonyl_Sulfide
Response
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5.00e+008
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0
2.00e+004
4.00e+004
Concentration
0.000e+000 Quadratic term
3.327e+004 Linear term
0.000e+000 Constant term
10.9% RF Rel Std Dev
OK
Cancel
Help
Print Calibration Curve
Copy Calibration Cu
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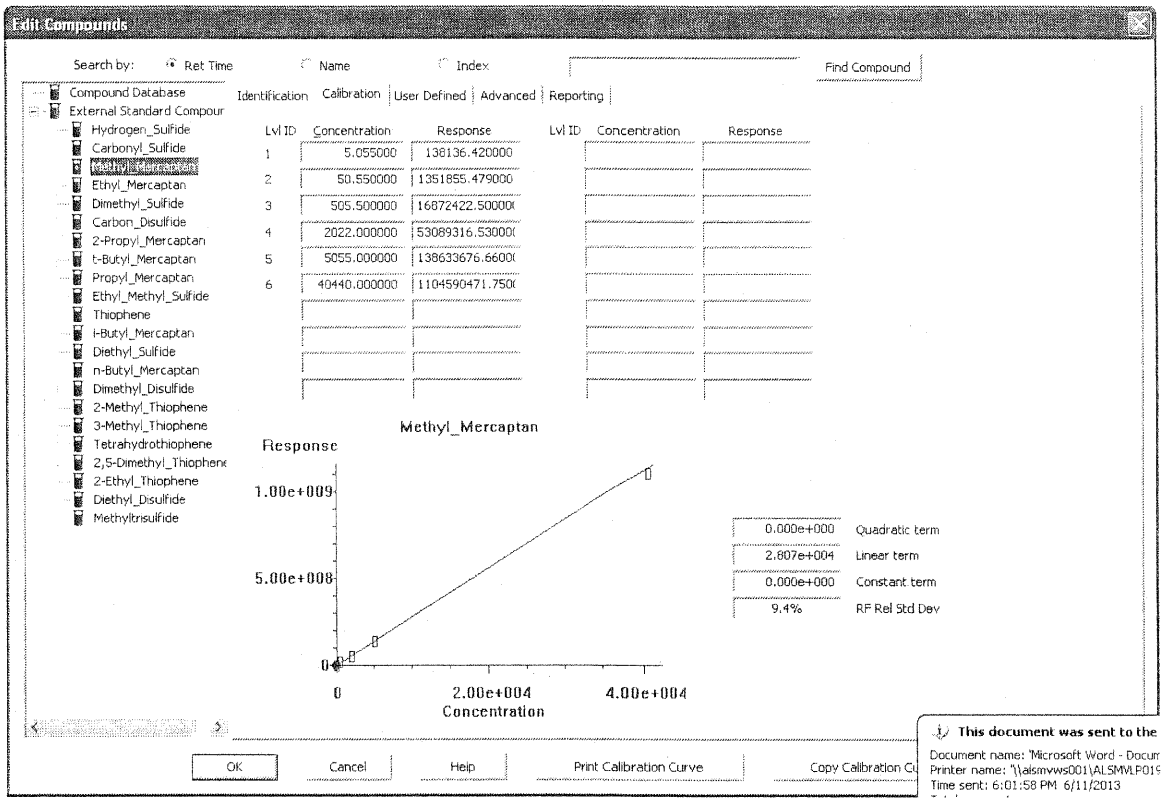
Document name: Microsoft Word - Docum
Printer name: \\alsmvws001\ALSMVLP01
Time sent: 6:01:43 PM 6/11/2013

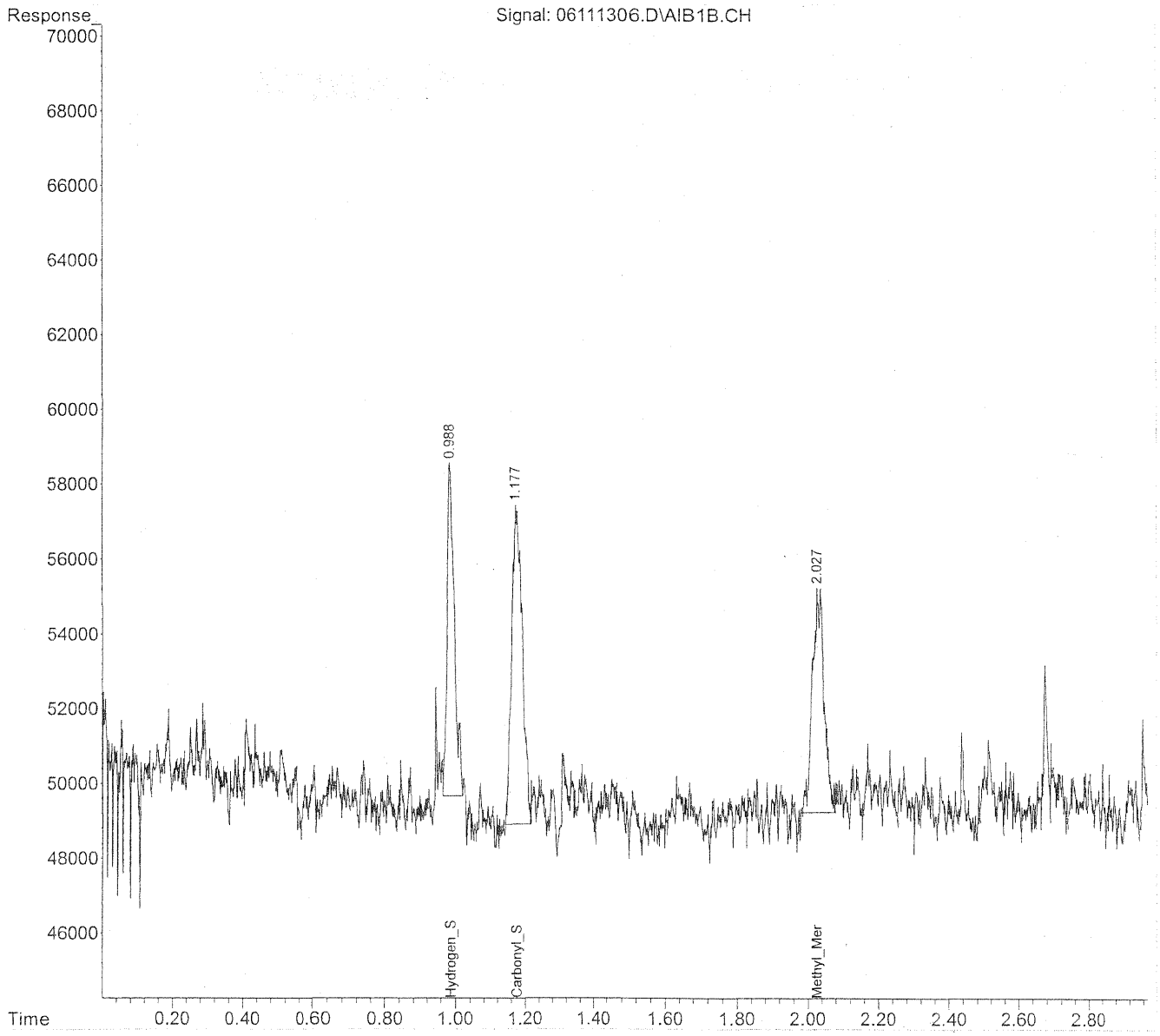

Edit Compounds
Search by: Ret Time Name Index
Find Compound
Compound Database
External Standard Compour
Hydrogen_Sulfide
Carbonyl_Sulfide
Methyl_Mercaptan
Ethyl_Mercaptan
Dimethyl_Sulfide
Carbon_Disulfide
2-Propyl_Mercaptan
t-Butyl_Mercaptan
Propyl_Mercaptan
Ethyl_Methyl_Sulfide
Thiophene
i-Butyl_Mercaptan
Diethyl_Sulfide
n-Butyl_Mercaptan
Dimethyl_Disulfide
2-Methyl_Thiophene
3-Methyl_Thiophene
Tetrahydrothiophene
2,5-Dimethyl_Thiophene
2-Ethyl_Thiophene
Diethyl_Disulfide
Methyltrisulfide
Identification Calibration User Defined Advanced Reporting
Lvl ID Concentration Response
1 5.055000 138136.420000
2 50.550000 1351855.479000
3 505.500000 16872422.50000
4 2022.000000 53089316.53000
5 5055.000000 138633676.6600
6 40440.000000 1104590471.750
Lvl ID Concentration Response
Methyl_Mercaptan
Response
1.00e+009
5.00e+008
0
0
2.00e+004
4.00e+004
Concentration
0.000e+000 Quadratic term
2.807e+004 Linear term
0.000e+000 Constant term
9.4% RF Rel Std Dev
OK
Cancel
Help
Print Calibration Curve
Copy Calibration Cu
This document was sent to the
Document name: 'Microsoft Word - Docum
Printer name: '\\alsmvws001\ALSMVLP019
Time sent: 6:01:58 PM 6/11/2013

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111306.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:20
Operator : MC
Sample : 5ppb std
Misc : 50ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:24:31 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111306.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:20
Operator : MC
Sample : 5ppb std
Misc : 50ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:24:31 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.988	123161	4.129	ppb	m
2)	W	Carbonyl_Sulfide	1.177	182320	5.567	ppb	m
3)	T	Methyl_Mercaptan	2.027	138136	4.005	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

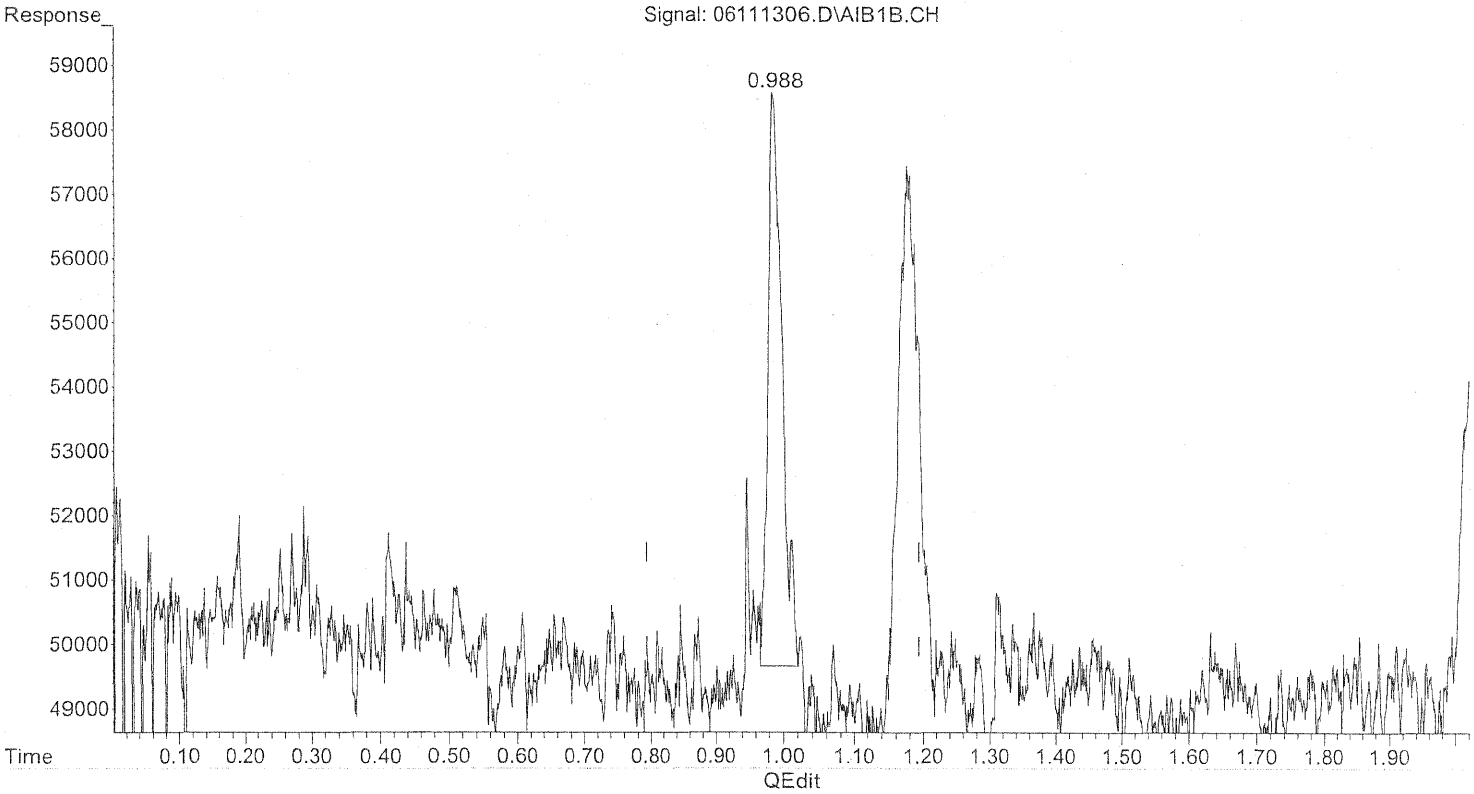
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111306.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:20
Operator : MC
Sample : 5ppb std
Misc : 50ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:24:31 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(1) Hydrogen_Sulfide (Z)
0.988min 4.129 ppb m
response 123161

MC 6/11/13 MP

No prevous

WO 6/11/13

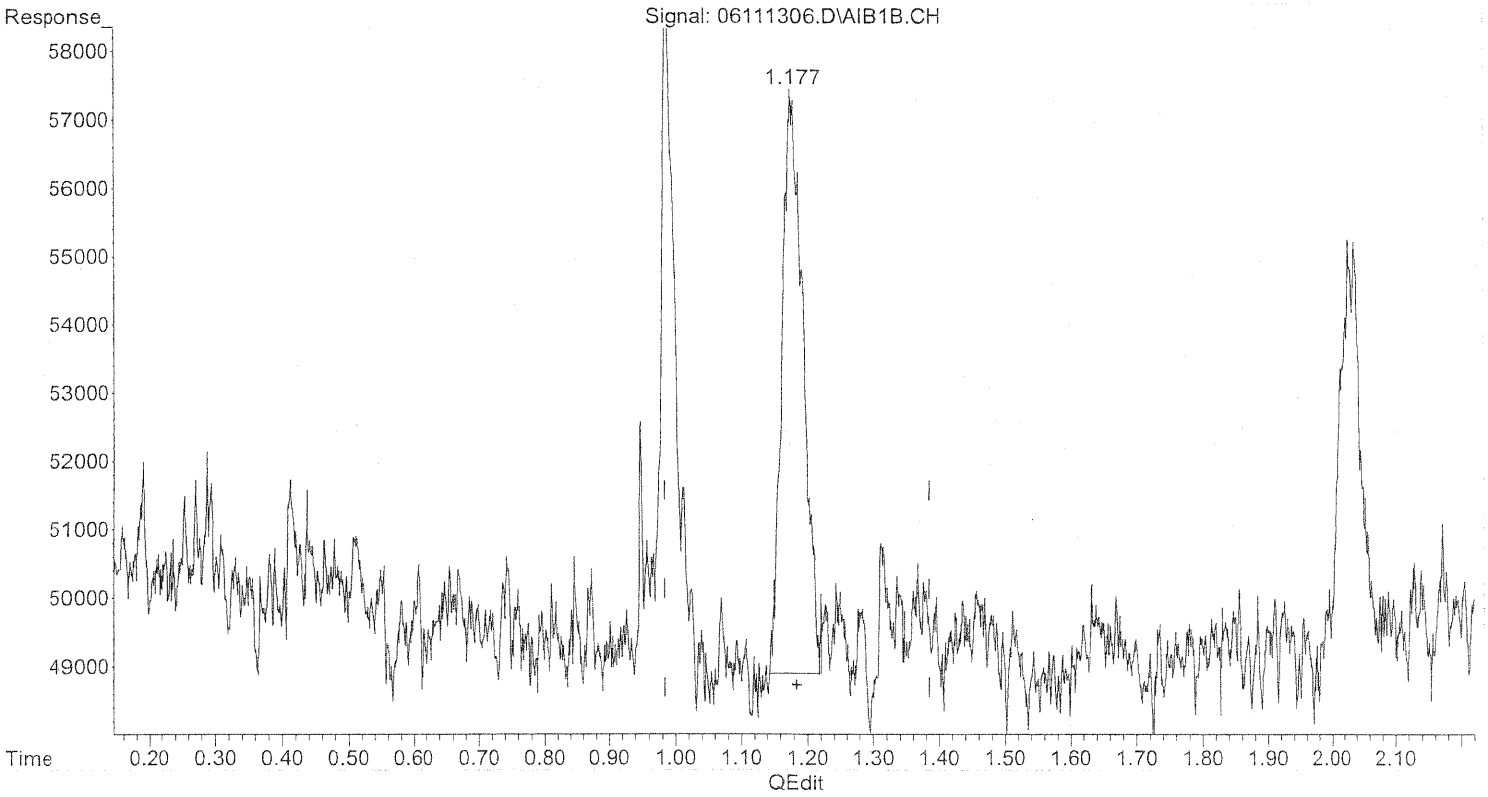
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111306.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:20
Operator : MC
Sample : 5ppb std
Misc : 50ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:24:31 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(2) Carbonyl_Sulfide (W)
1.177min 5.567 ppb m
response 182320

MC
6/11/13
MP
No previous

6/11/13

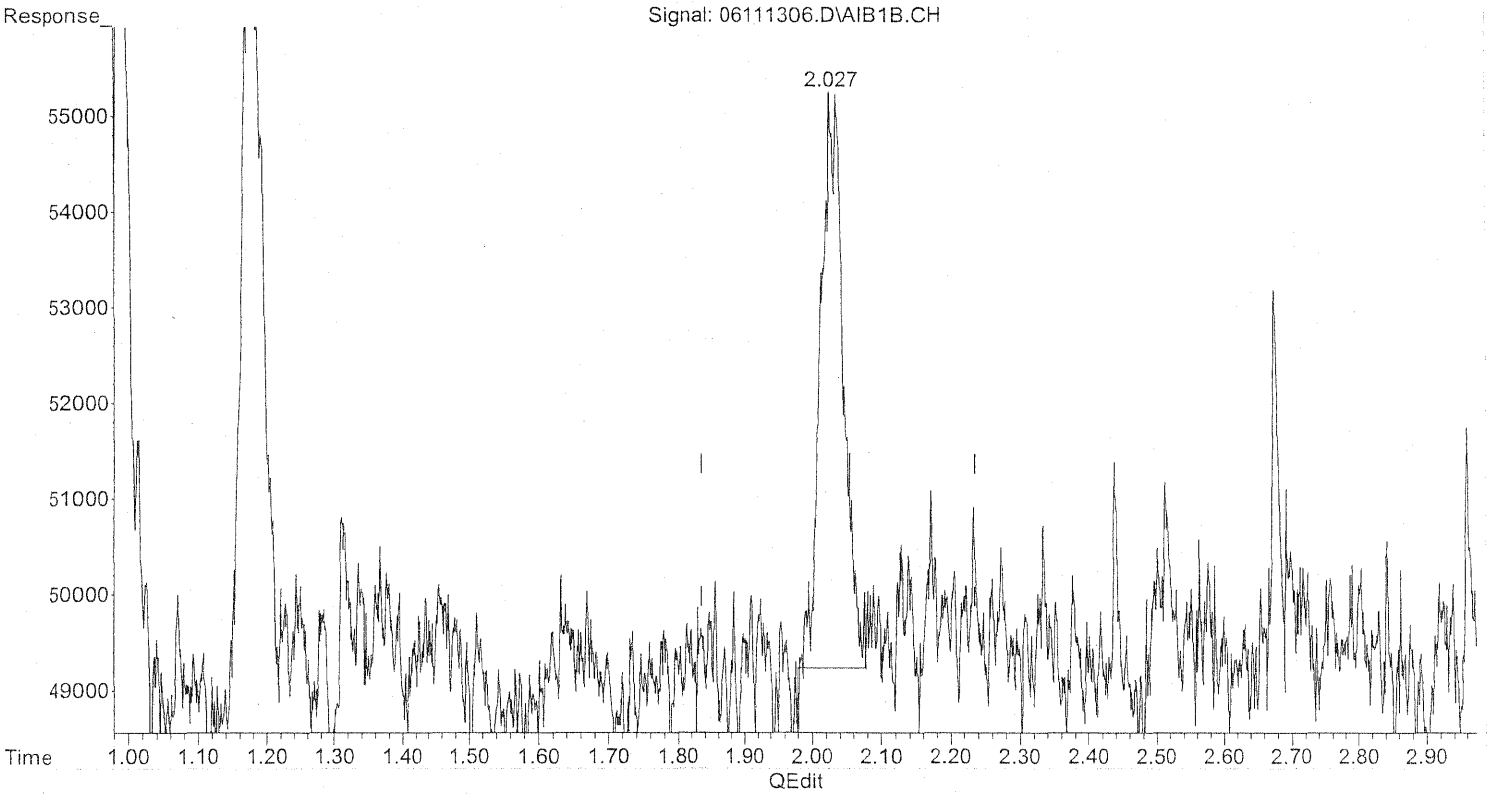
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111306.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:20
Operator : MC
Sample : 5ppb std
Misc : 50ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:24:31 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(3) Methyl_Mercaptan (T)
2.027min 4.005 ppb m
response 138136

MC
6/11/13
MP

No previous

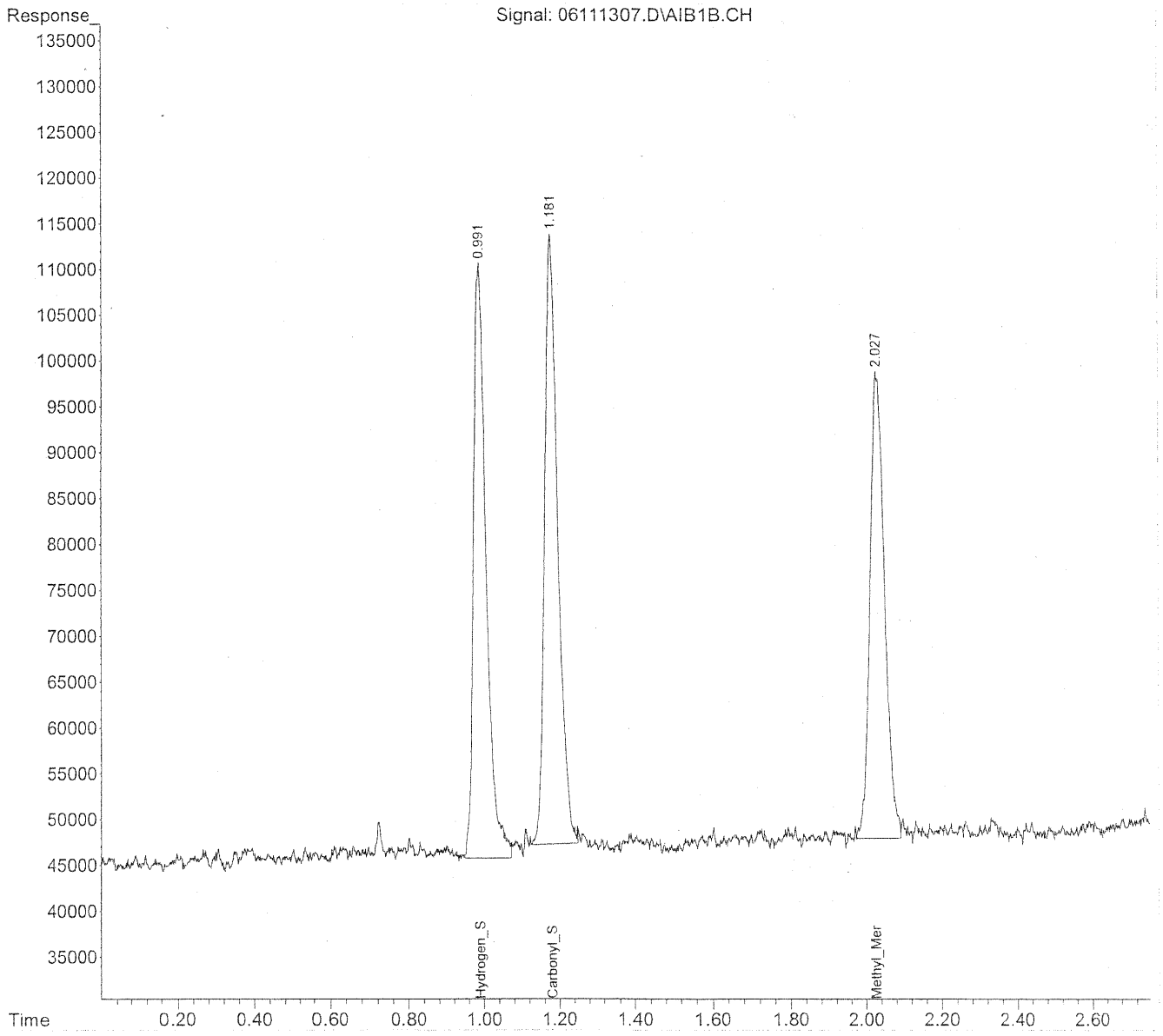
6/11/13

(+) = Expected Retention Time

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111307.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:27
Operator : MC
Sample : 50ppb std
Misc : 500ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:31:08 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111307.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:27
Operator : MC
Sample : 50ppb std
Misc : 500ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:31:08 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

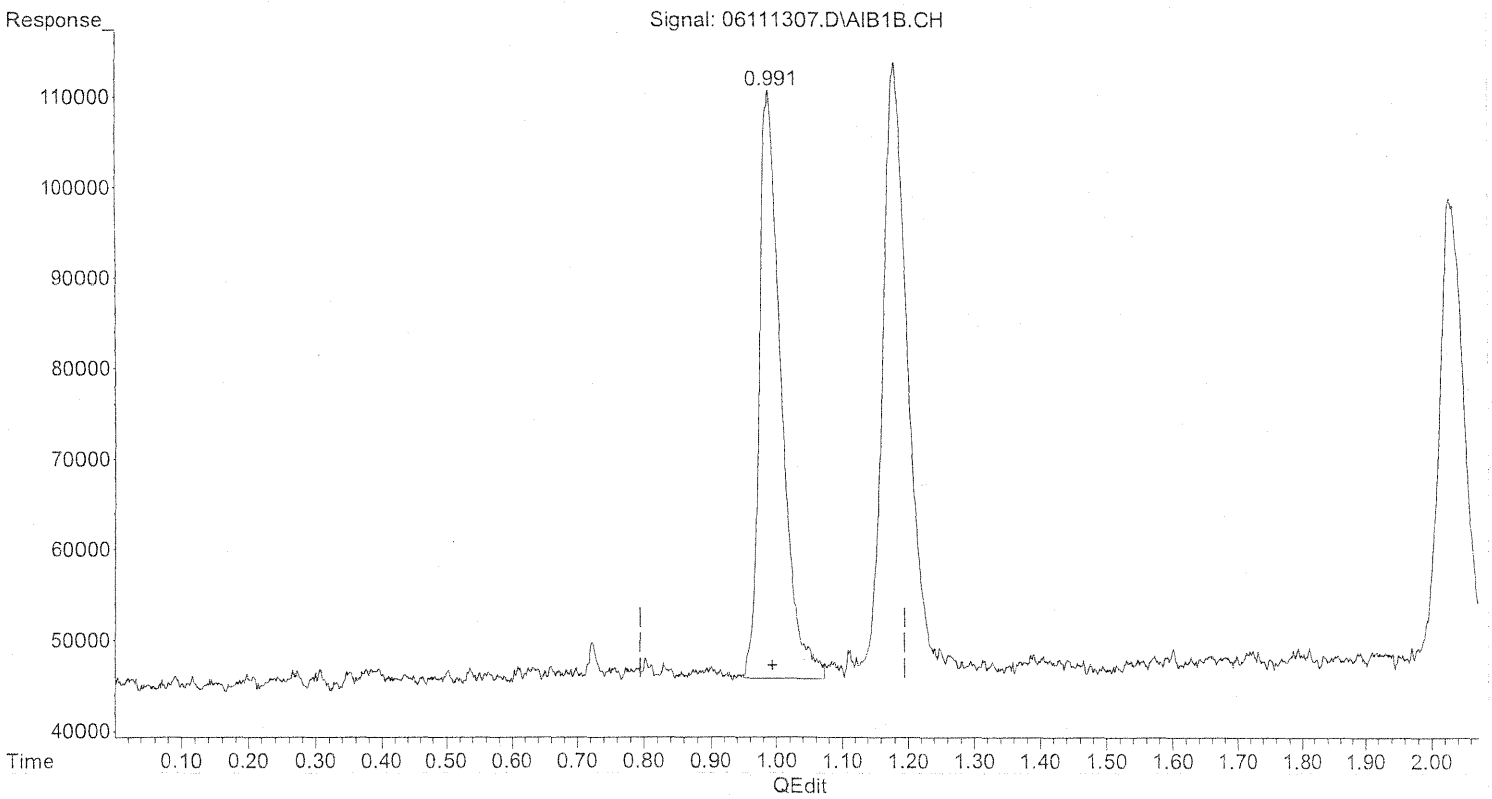
		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.991	1508034	50.562	ppb	m
2)	W	Carbonyl_Sulfide	1.181	1645522	50.247	ppb	m
3)	T	Methyl_Mercaptan	2.027	1351855	39.199	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111307.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:27
Operator : MC
Sample : 50ppb std
Misc : 500ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:31:08 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(1) Hydrogen_Sulfide (Z)
0.991min 50.562 ppb m
response 1508034

MC
6/11/13
MP
No peaks

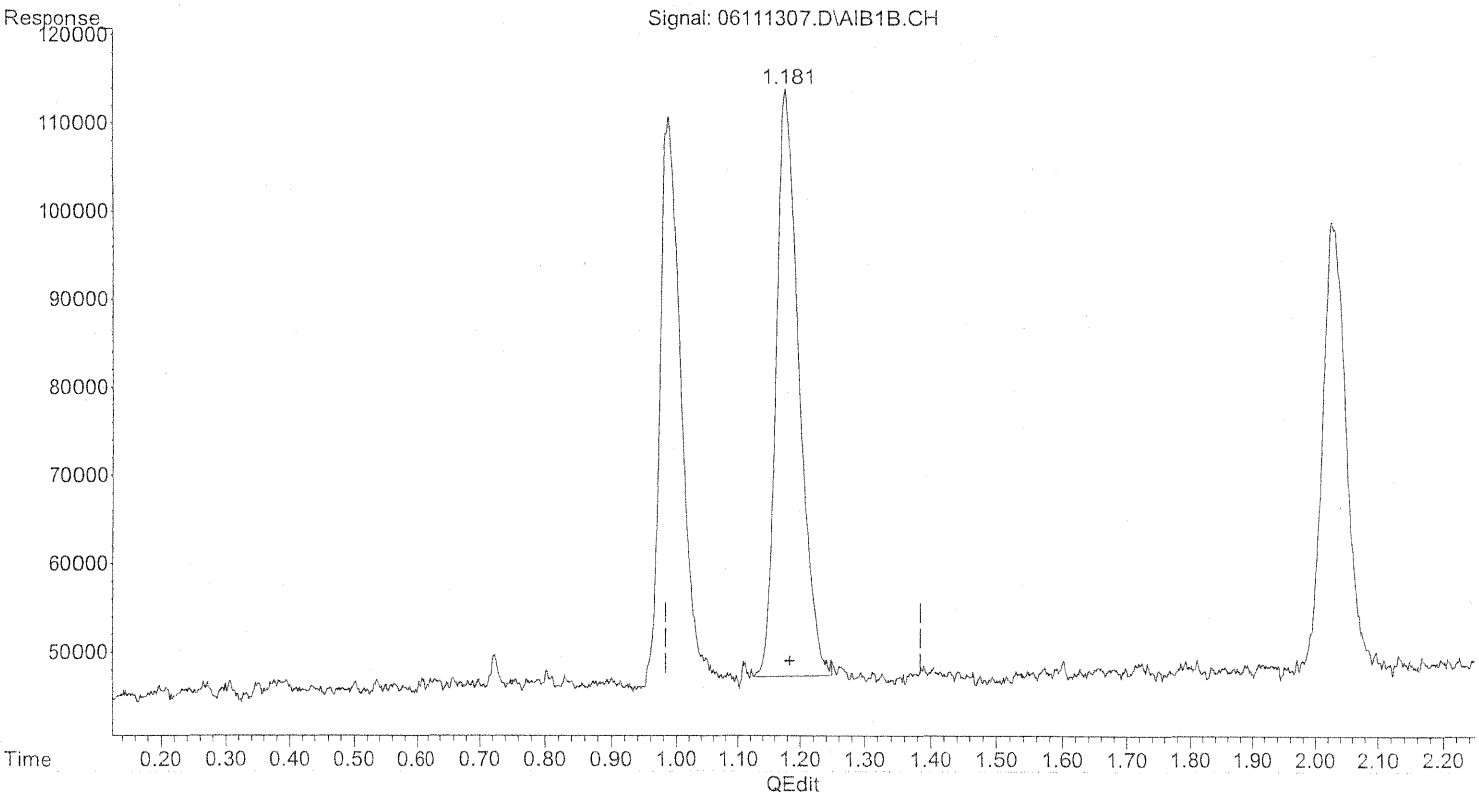
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111307.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:27
Operator : MC
Sample : 50ppb std
Misc : 500ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:31:08 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(2) Carbonyl_Sulfide (W)
1.181min 50.247 ppb m
response 1645522

ML
6/11/13
MP
No peaks

6/11/13

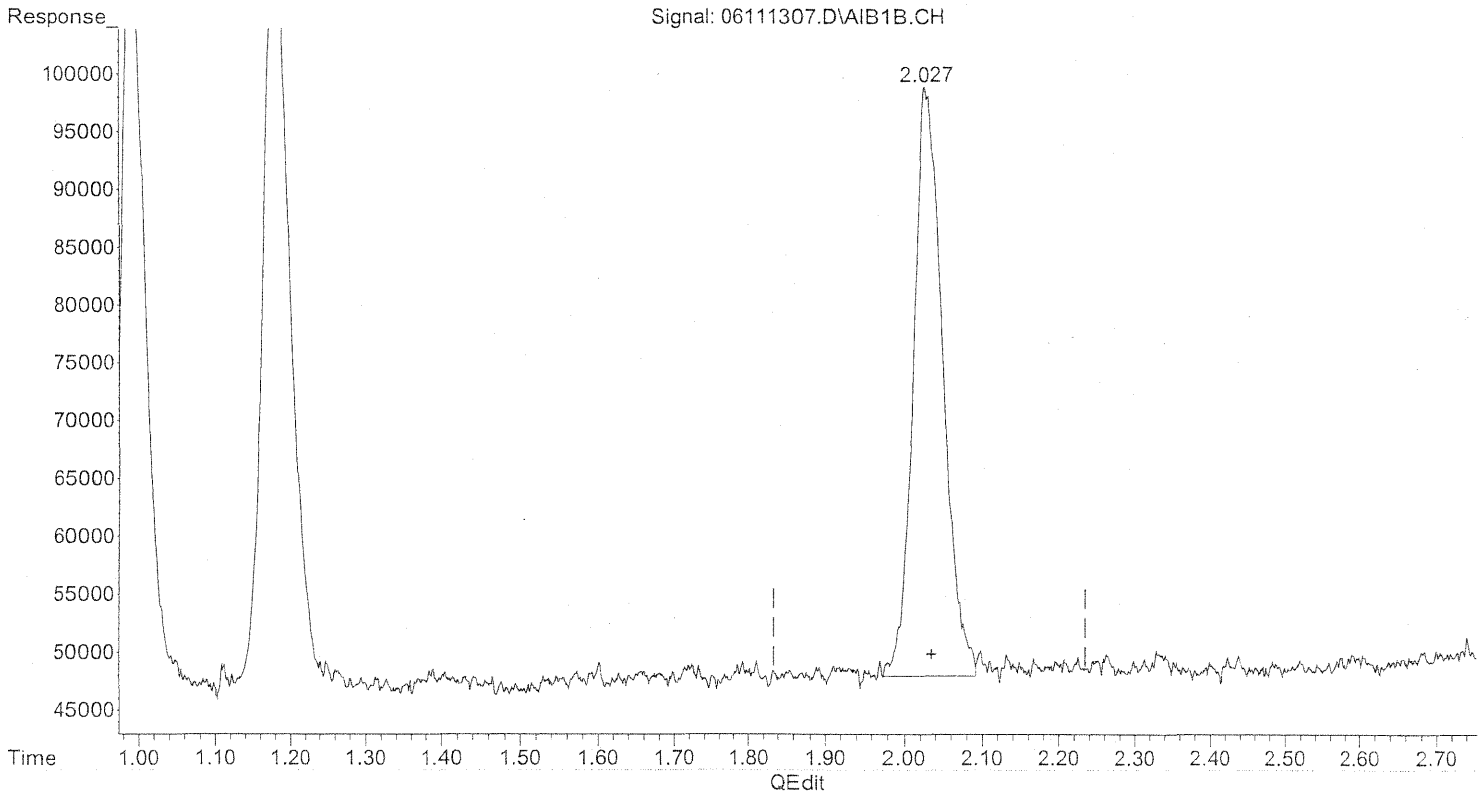
(+) = Expected Retention Time

Quantitation Report (QEdit)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111307.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:27
Operator : MC
Sample : 50ppb std
Misc : 500ul injection of s27-06111307
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:31:08 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



(3) Methyl_Mercaptan (T)
2.027min 39.199 ppb m
response 1351855

MC 6/11/13

MP

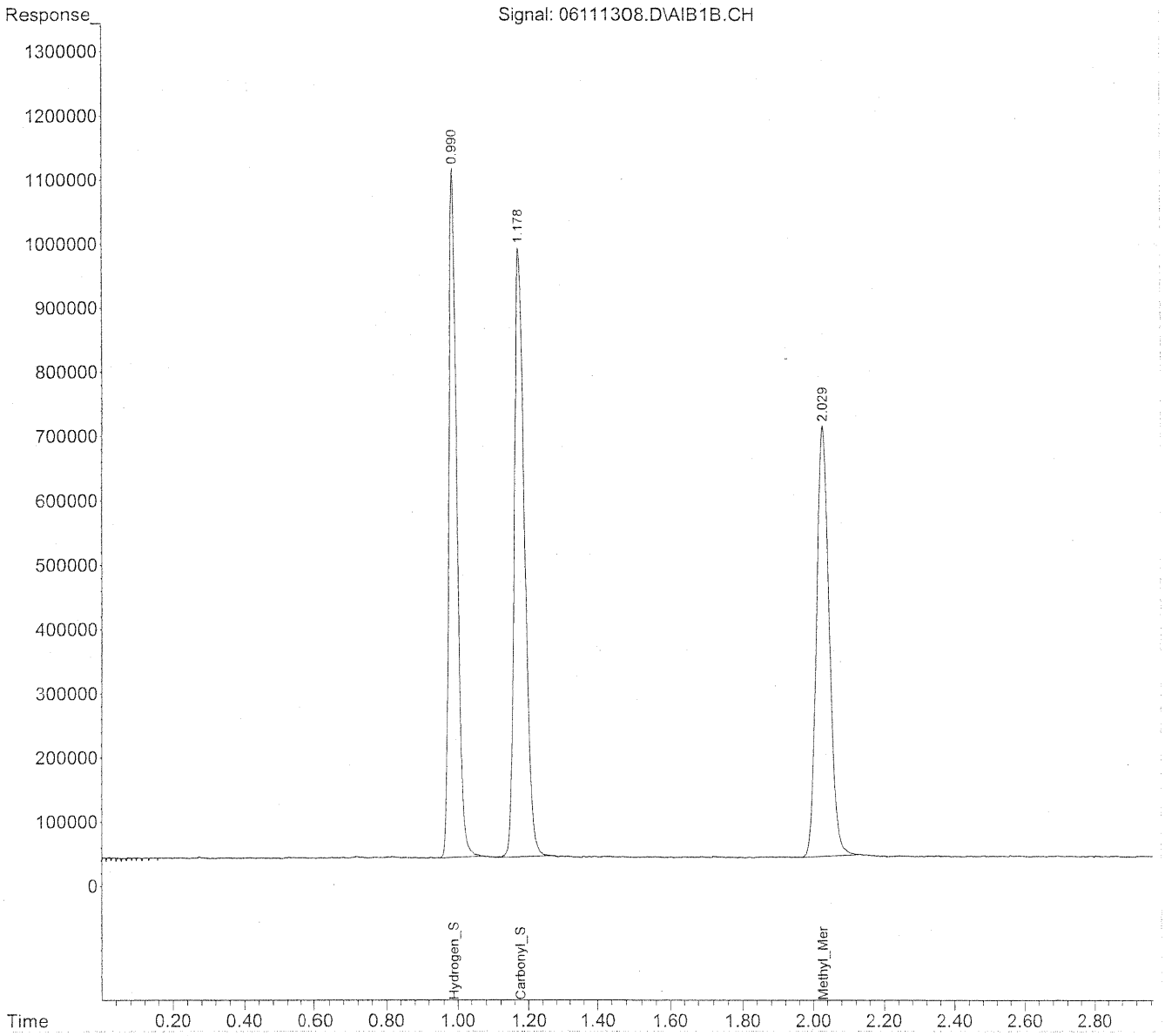
No previous

(+) = Expected Retention Time

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111308.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:32
Operator : MC
Sample : 500ppb
Misc : 50ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:35:49 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111308.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:32
Operator : MC
Sample : 500ppb
Misc : 50ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:35:49 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

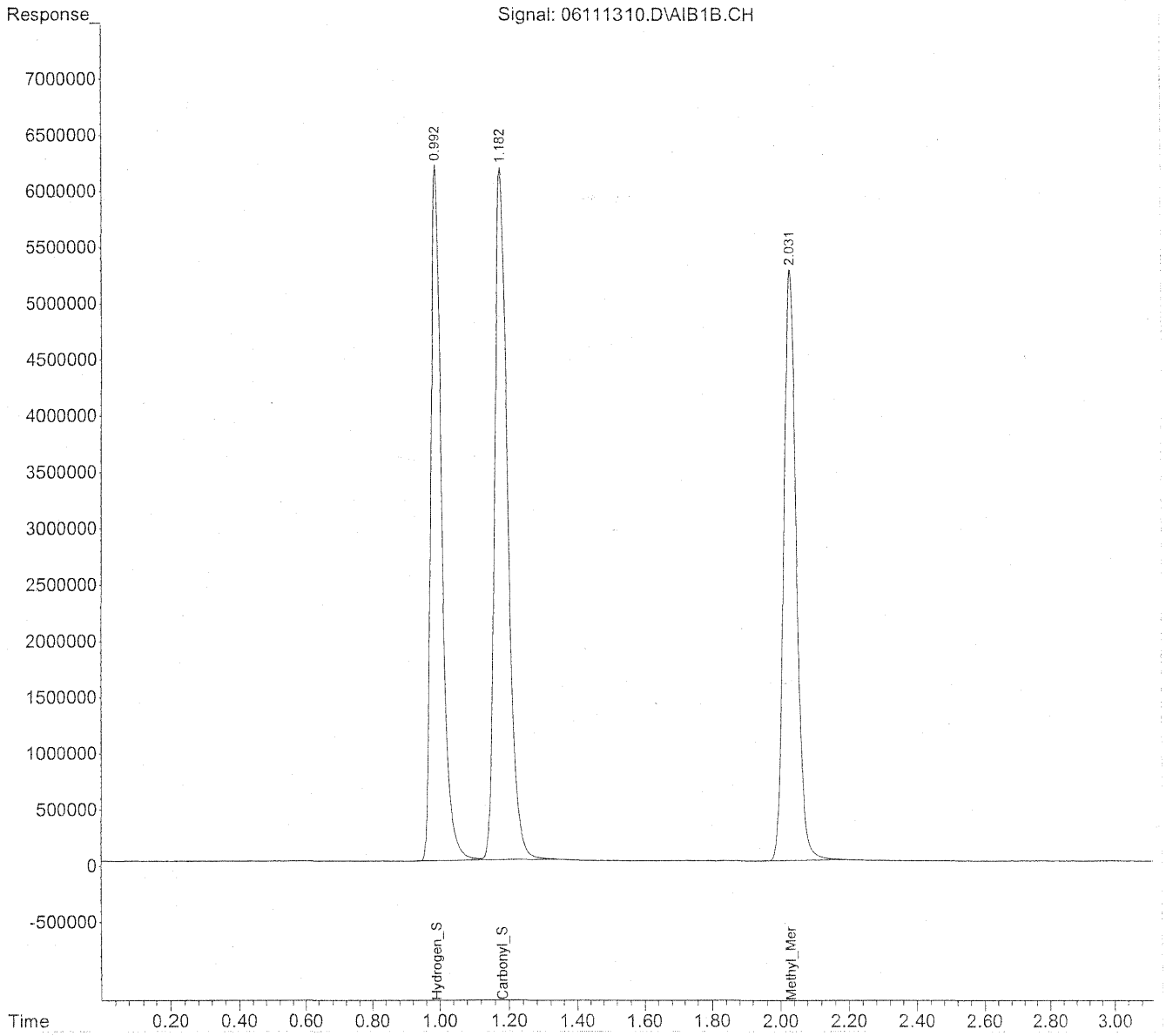
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.991	17338154	581.323	ppb
2)	W	Carbonyl_Sulfide	1.179	19984880	610.253	ppb
3)	T	Methyl_Mercaptan	2.030	16872423	489.244	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111310.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:40
Operator : MC
Sample : 5000ppb
Misc : 500ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:43:57 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111310.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:40
Operator : MC
Sample : 5000ppb
Misc : 500ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:43:57 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.993	142699259	4784.494	ppb
2)	W	Carbonyl_Sulfide	1.183	160571898	4903.183	ppb
3)	T	Methyl_Mercaptan	2.032	138633677	4019.918	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

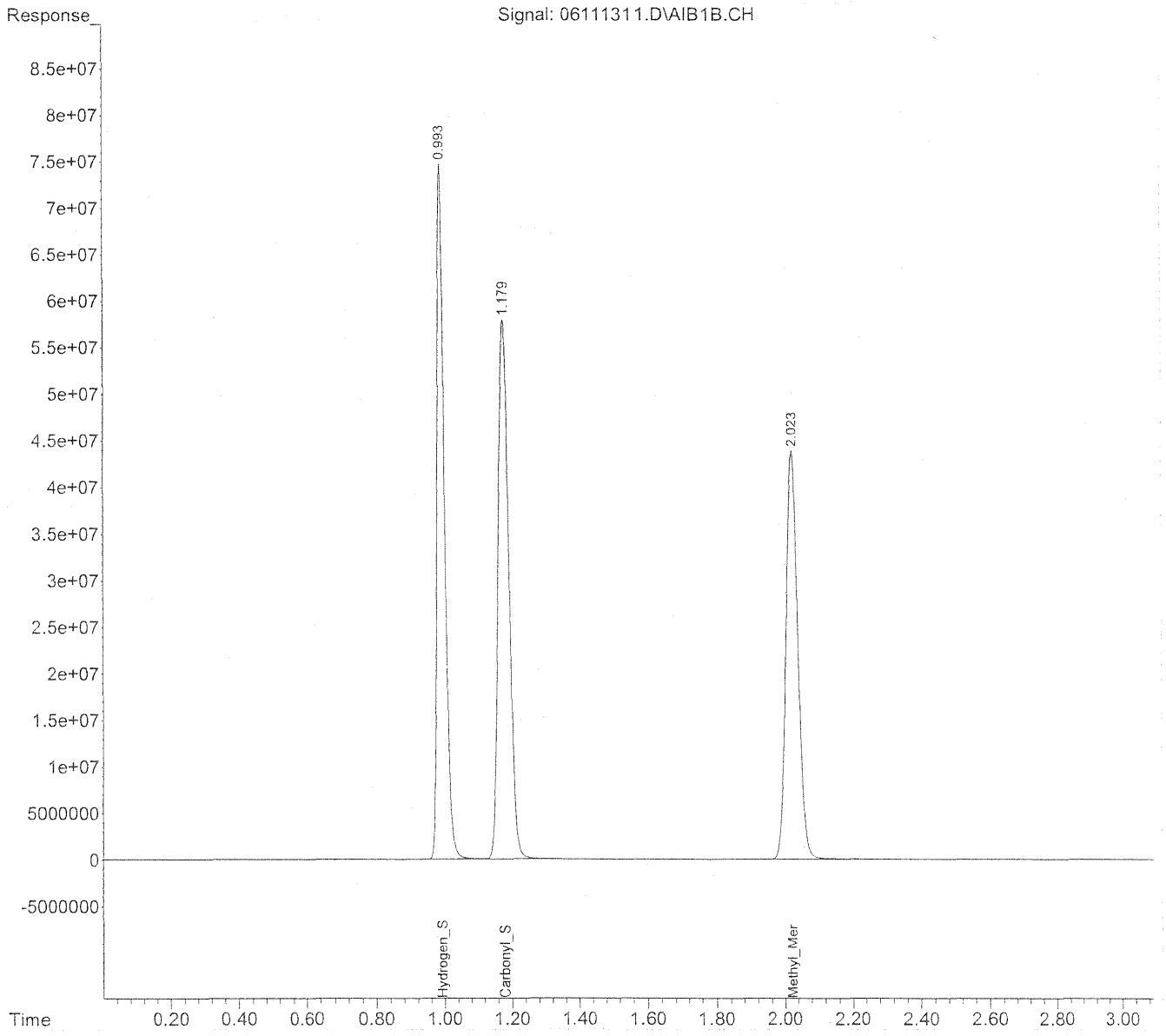
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111311.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:53
Operator : MC
Sample : 40000ppb
Misc : 40ul injection of s27-12041201
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:56:26 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111311.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:53
Operator : MC
Sample : 40000ppb
Misc : 40ul injection of s27-12041201
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 15:56:26 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

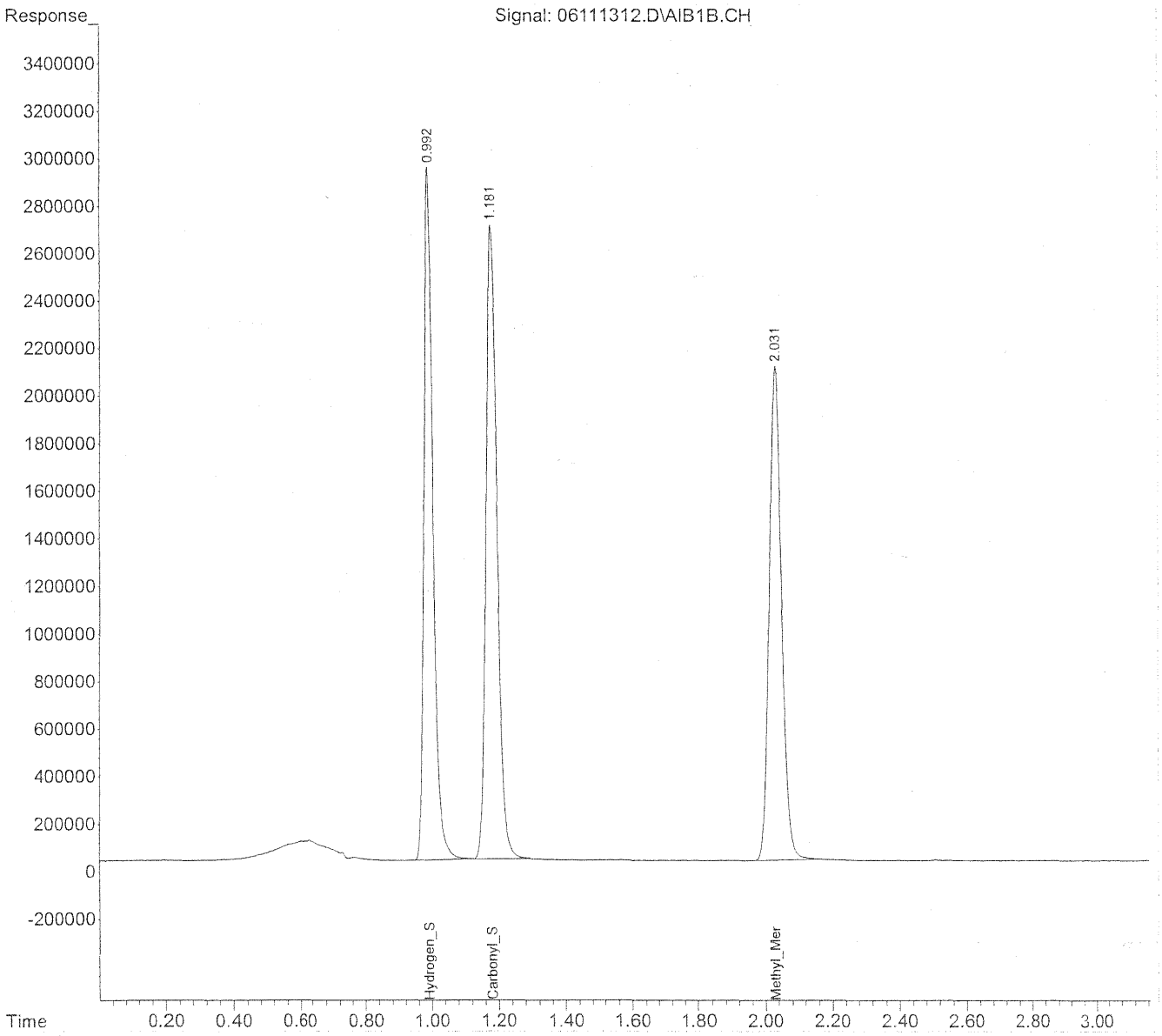
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.994	1188736030	39856.551	ppb
2)	W	Carbonyl_Sulfide	1.180	1225842658	37432.024	ppb
3)	T	Methyl_Mercaptan	2.023	1104590472	32029.473	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111312.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:57
Operator : MC
Sample : 2000ppb
Misc : 200ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 16:00:34 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111312.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 15:57
Operator : MC
Sample : 2000ppb
Misc : 200ul injection of s27-05291304
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 16:00:34 2013
Quant Method : J:\GC13\METHODS\GC13120512.M
Quant Title : 20 Sulfurs
QLast Update : Wed Dec 05 13:46:50 2012
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

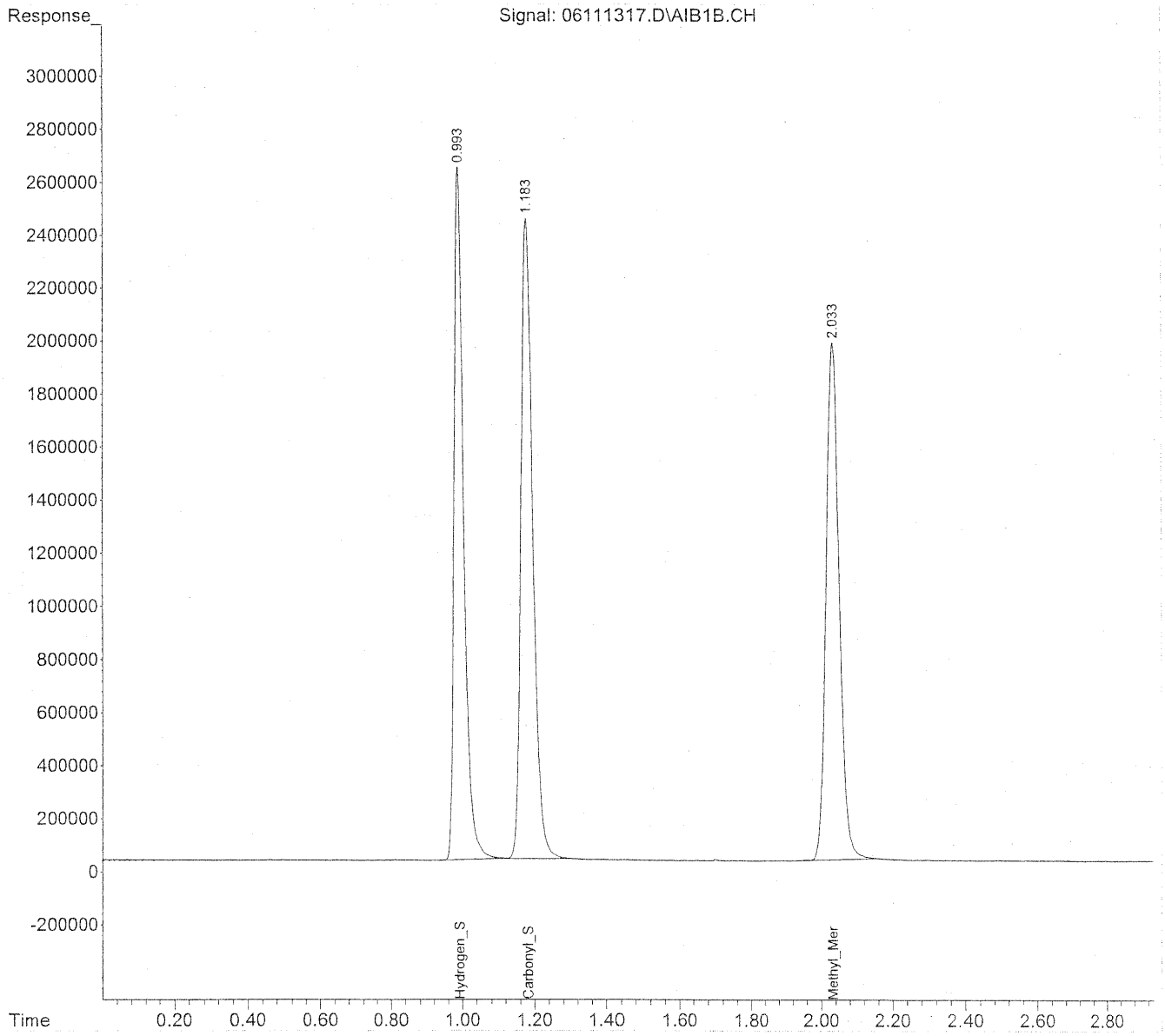
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.993	55314765	1854.622	ppb
2)	W	Carbonyl_Sulfide	1.182	61473675	1877.145	ppb
3)	T	Methyl_Mercaptan	2.031	53089317	1539.415	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111317.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 18:26
Operator : MC
Sample : icv 2000ppb s27-05241304
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 18:29:14 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_06\11\
Data File : 06111317.D
Signal(s) : AIB1B.CH
Acq On : 11 Jun 2013 18:26
Operator : MC
Sample : icv 2000ppb s27-05241304
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 11 18:29:14 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :
DataAcq Meth:GC13ACQ.M

		Compound	Actual	R.T.		Response	Conc	Units	
Target Compounds									
1)	Z	Hydrogen_Sulfide	2045.54	0.994		49101887	1673.137	ppb	81.8%
2)	W	Carbonyl_Sulfide	2017.480	1.183		55474593	1667.220	ppb	82.6%
3)	T	Methyl_Mercaptan	1887.74	2.033		50123263	1785.414	ppb	94.6%
4)	T	Ethyl_Mercaptan		0.000		0	N.D.	ppb	
5)	T	Dimethyl_Sulfide		0.000	MC	0	N.D.	ppb	
6)	T	Carbon_Disulfide		0.000	6/11/13	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan		0.000		0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan		0.000		0	N.D.	ppb	
9)	T	Propyl_Mercaptan		0.000		0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide		0.000		0	N.D.	ppb	
11)	T	Thiophene		0.000		0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan		0.000		0	N.D.	ppb	
13)	T	Diethyl_Sulfide		0.000		0	N.D.	ppb	
14)		n-Butyl_Mercaptan		0.000		0	N.D.	ppb	
15)		Dimethyl_Disulfide		0.000		0	N.D.	ppb	
16)	T	2-Methyl_Thiophene		0.000		0	N.D.	ppb	
17)		3-Methyl_Thiophene		0.000		0	N.D.	ppb	
18)	T	Tetrahydrothiophene		0.000		0	N.D.	ppb	
19)		2,5-Dimethyl_Thiophene		0.000		0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene		0.000		0	N.D.	ppb	
21)	T	Diethyl_Disulfide		0.000		0	N.D.	ppb	
22)	T	Methyltrisulfide		0.000		0	N.D.	ppb	

(f)=RT Delta > 1/2 Window (m)=manual int.

ALS Environmental

REPORT SUMMARY

Method : 20 Sulfurs
Client : Trevet
Analyst : MC

Service Request : P1305675
Instrument : GC13
Date Acquired : 12/27/13

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup		
			MB					dup	%RSD
Sample Information :	ppb	ppb	mb 1ml				0	0	
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0	1.0	1.0	
Dilution	1.0	1.0	1.00		1.0	1.0	1.0	1.0	
Pi:	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
Pi:	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
PiPf DF:	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
Hydrogen_Sulfide	1.700	5.000	ND	P					
Carbonyl_Sulfide	1.900	5.000	ND	P					
Methyl_Mercaptan	2.200	5.000	ND	P					
Ethyl_Mercaptan	2.200	5.000	ND	P					
Dimethyl_Sulfide	2.200	5.000	ND	P					
Carbon_Disulfide	1.100	2.500	ND	P					
2-Propyl_Mercaptan	2.200	5.000	ND	P					
t-Butyl_Mercaptan	2.200	5.000	ND	P					
Propyl_Mercaptan	2.200	5.000	ND	P					
Ethyl_Methyl_Sulfide	2.200	5.000	ND	P					
Thiophene	2.200	5.000	ND	P					
i-Butyl_Mercaptan	2.200	5.000	ND	P					
Diethyl_Sulfide	2.200	5.000	ND	P					
n-Butyl_Mercaptan	2.200	5.000	ND	P					
Dimethyl_Disulfide	1.100	2.500	ND	P					
2-Methylthiophene	2.200	5.000	ND	P					
3-Methylthiophene	2.200	5.000	ND	P					
Tetrahydrothiophene	2.200	5.000	ND	P					
2,5-Dimethylthiophene	2.200	5.000	ND	P					
2-Ethylthiophene	2.200	5.000	ND	P					
Diethyl_Disulfide	1.100	2.500	ND	P					
Methyltrisulfide	1.100	2.500	ND	P					
Acqisition Time			8:31 AM						
DataFile			12271306.D						

Continuing Calibration Standards Summary (ppbv)

Compounds	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	std 2000ppb s27-12091301		std 2000ppb s27-12091301		std 2000ppb s27-12091301		std 2000ppb s27-12091301							
Inj. Vol. (ml)	0.20		0.20		0.20		0.20		0.20		0.20		0.20	
Hydrogen_Sulfide	1998.14	0.3%	2395.040	20.2%	1983.881	0.4%	1727.049	13.3%						
Carbonyl_Sulfide	1940.32	4.5%	2335.615	14.9%	1920.893	5.5%	1662.175	18.2%						
Methyl_Mercaptan	1942.53	3.9%	2340.867	15.8%	2048.953	1.3%	1702.728	15.8%						
	7:56 AM		8:55 AM		1:00 PM		3:31 PM							
	12271302.D		12271307.D		12271320.D		12271330.D							

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	1922.00	94.0%		2069.68	101.2%	7.40%	2045.54
Carbonyl_Sulfide	1861.23	92.3%		2039.69	101.1%	9.15%	2017.48
Methyl_Mercaptan	1953.69	103.5%		2185.23	115.8%	11.19%	1887.74
Acqisition Time	7:59 AM			8:03 AM			
DataFile	12271303.D			12271304.D			

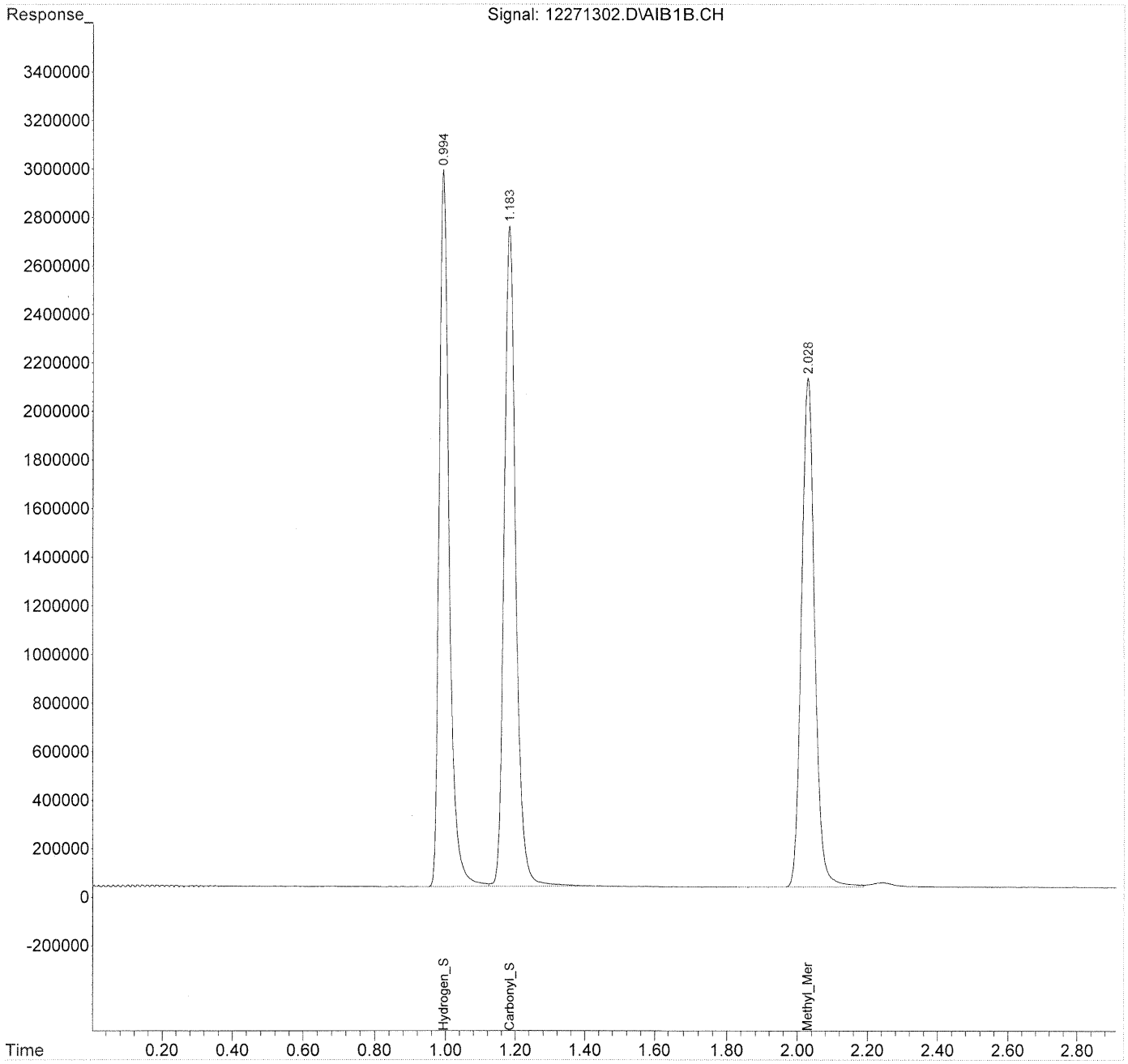
MC 1/4/14

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271302.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 7:56 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:44:53 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271302.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 7:56 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:44:53 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.995	58639691	1998.136	ppb
2)	W	Carbonyl_Sulfide	1.184	64561691	1940.322	ppb
3)	T	Methyl_Mercaptan	2.029	54534020	1942.527	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

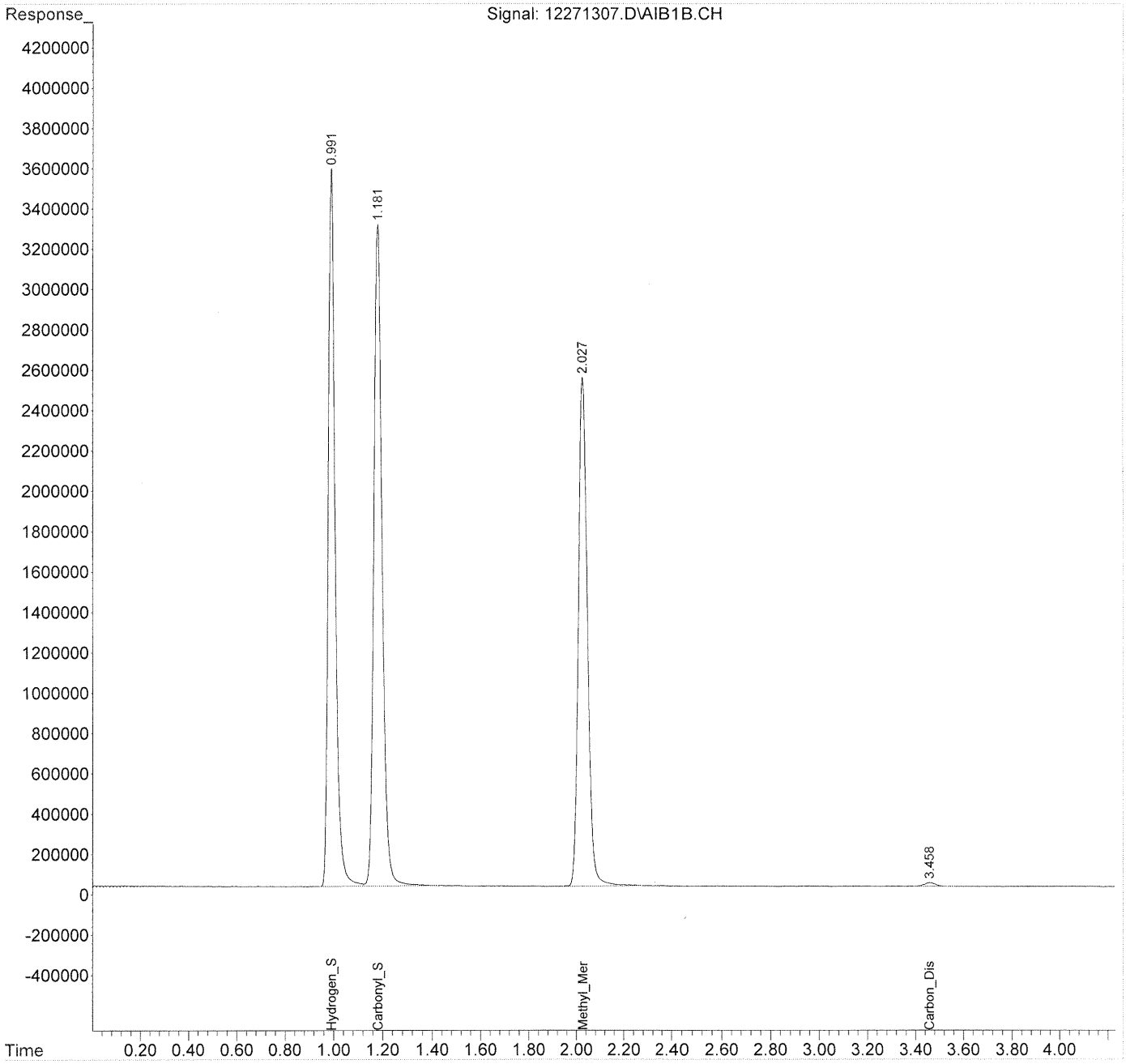
MC
12/27/13

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271307.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:55 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 08:59:28 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271307.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 8:55 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 08:59:28 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.991	70287696	2395.040	ppb
2)	W	Carbonyl_Sulfide	1.181	77714544	2335.615	ppb
3)	T	Methyl_Mercaptan	2.028	65716914	2340.867	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.461	607898	10.827	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

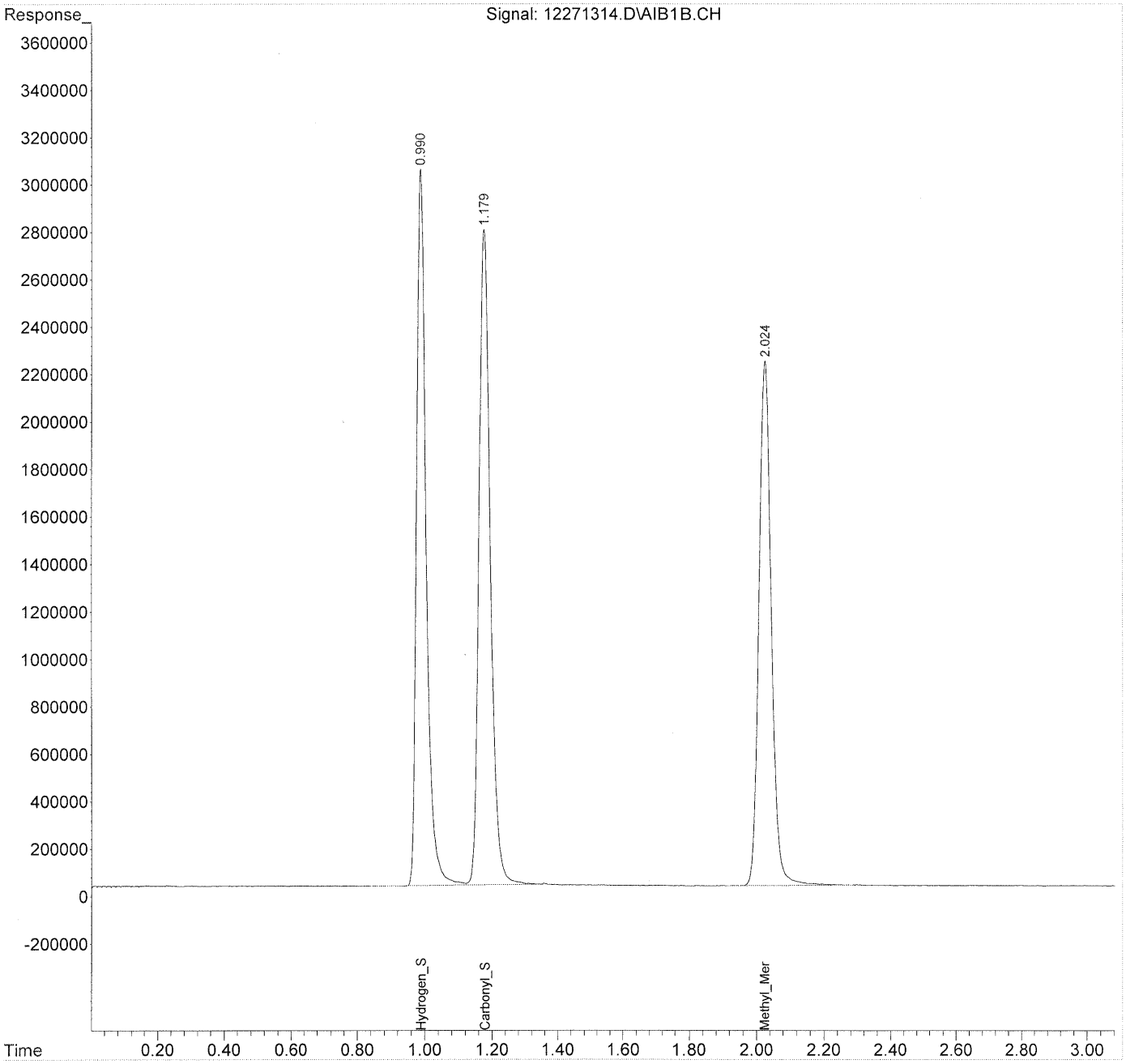
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271314.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 10:52 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:06:02 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271314.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 10:52 am
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 11:06:02 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.991	59604950	2031.027	ppb
2)	W	Carbonyl_Sulfide	1.179	65010613	1953.814	ppb
3)	T	Methyl_Mercaptan	2.025	57852347	2060.727	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

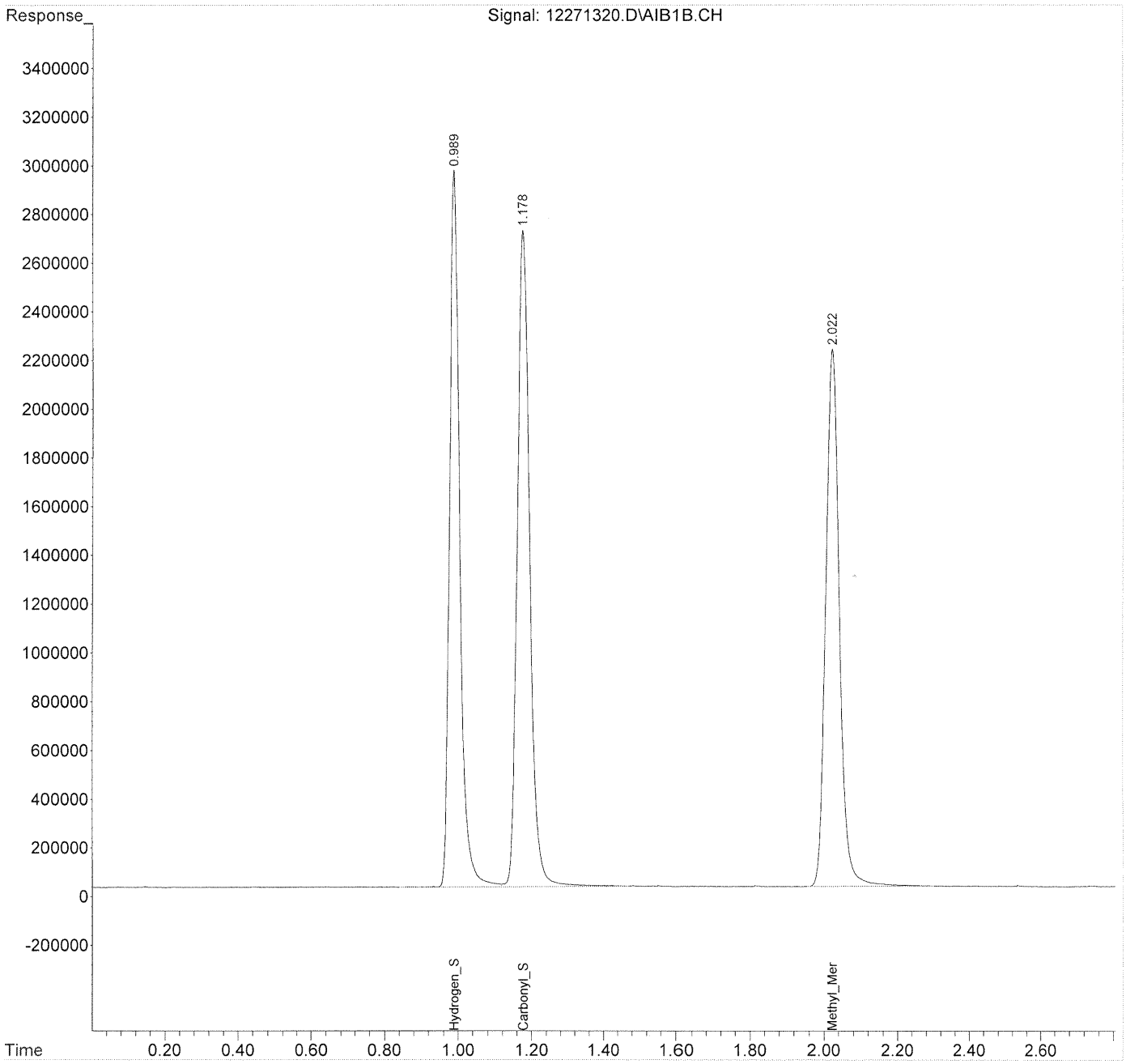
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271320.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 1:00 pm
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 13:03:44 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271320.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 1:00 pm
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 13:03:44 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.990	58221346	1983.881	ppb
2)	W	Carbonyl_Sulfide	1.178	63915211	1920.893	ppb
3)	T	Methyl_Mercaptan	2.023	57521798	2048.953	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

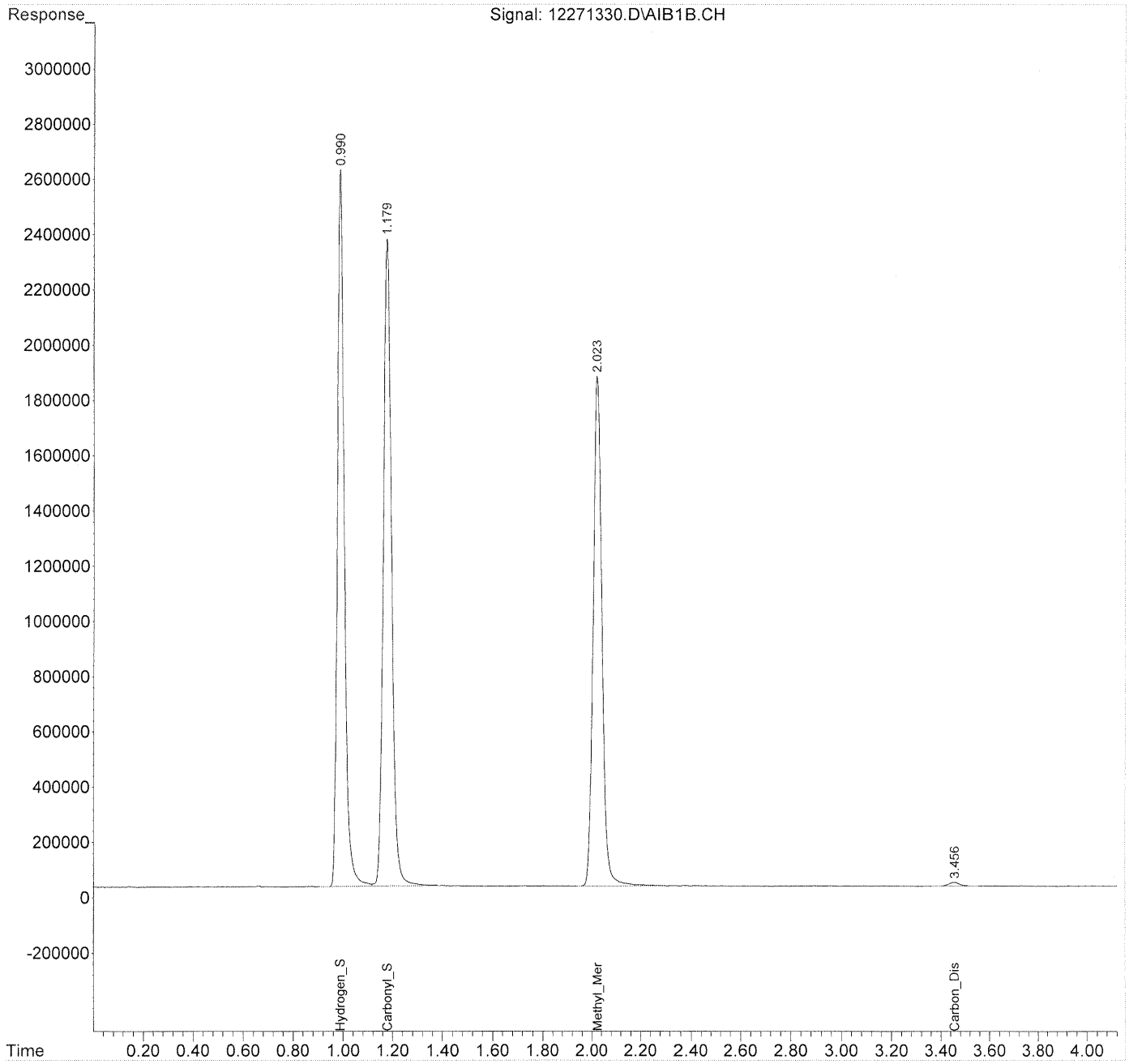
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271330.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:31 pm
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:39:43 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2013_12\27\
Data File : 12271330.D
Signal(s) : AIB1B.CH
Acq On : 27 Dec 2013 3:31 pm
Operator : MC
Sample : std 2000ppb s27-12091301
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 27 15:39:43 2013
Quant Method : J:\GC13\METHODS\GC13061113.M
Quant Title : 20 Sulfurs
QLast Update : Tue Jun 11 17:34:05 2013
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.990	50684039	1727.049	ppb
2)	W	Carbonyl_Sulfide	1.179	55306706	1662.175	ppb
3)	T	Methyl_Mercaptan	2.024	47801963	1702.728	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.456	443075	7.891	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)		n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)		Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)		3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)		2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

ALS

SAMPLE RUN LOG

ID: Agilent 6890A / GC13

DATA SYSTEM: HP Chemstation

INJECTOR: PACKED COLUMN

DATE: 6 / 11 / 2013

TYPE OF ANALYSIS: SULFUR - ☐H2O ☑SCAQMD 307M/ ASTM D5504

Refer to appropriate SOP for instrument parameters.

DATA PATHWAY: J:\GC13\DATA\SCD\ ~~2013/06/11~~ 2013-06/11 (ML 6/11/13)

METHOD FILE NAME: J:\GC13\METHODS\ GC13120512/GC13061113 .M

	DATA FILE HEADER INFO	CLIENT	ANALYST
01	STD 200ppb		ML
02	1		
03	test 1		
04	test 1		
05	test 1		
06	5ppb std		
07	50ppb std		
08	500ppb std		
09	x200ppb		
10	500ppb		
11	400ppb		
12	200ppb		
13	5ppb		
14	ICV 200ppb SL7-05241304		
15	blank 1mL		
16	ICV 200ppb SL7		
17	KV 200ppb SL7-05241304		
18			
19		ML	
20		6/11/13	
21		NA	
22			
23			
24			
25			

	DATA FILE HEADER INFO	CLIENT	ANALYST
26			
27			
28			
29			
30		ML	
31		6/11/13	
32		NA	
33			
34			
35			
36			
37			
38			
39			
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49			
50			

SAMPLE RUN LOG

ID: Agilent 6890A / GC13

DATA SYSTEM: HP Chemstation
INJECTOR: PACKED COLUMN
DATE: 12 / 27 / 2013
TYPE OF ANALYSIS: SULFUR - ☐H2O ☑SCAQMD 307M/ ASTM D5504
Refer to appropriate SOP for instrument parameters.

DATA PATHWAY: J:\GC13\DATA\SCD\ 2013_12/27
METHOD FILE NAME: J:\GC13\METHODS\ GC13061113 .M

	DATA FILE HEADER INFO	CLIENT	ANALYST
01	Std 2000ppb		MC
02	Std 2000ppb S27-12041301		
03	LCS 2000ppb S27-12041302		
04	LCSD 2000ppb S27-12041302		
05	CT		
06	mb 1ml		
07	Std 2000ppb S27 12041301		
08	5705-001 1ml		
09	5653-005 1ml		
10	↓ -006 1ml		
11	5704-001 1ml		
12	5710-001 1ml		
13	↓ -001 0.03ml		
14	Std 2000ppb. S27-12041301		
15	5711-001 0.05ml		
16	↓ -003 0.1ml		
17	5653-007 1ml		
18	↓ -008 1ml		
19	Std 2000ppb		
20	Std 2000ppb S27-12041301		
21	5684-001 1ml		
22	-002 1ml		
23	-003 1ml		
24	↓ -004 1ml		
25	5675-001 1ml		
26	5675-004 1ml		MC
27	↓ -005 1ml		
28	↓ -006 1ml		
29	Std 2000ppb		
30	Std 2000ppb S27-12041301		
31			
32			
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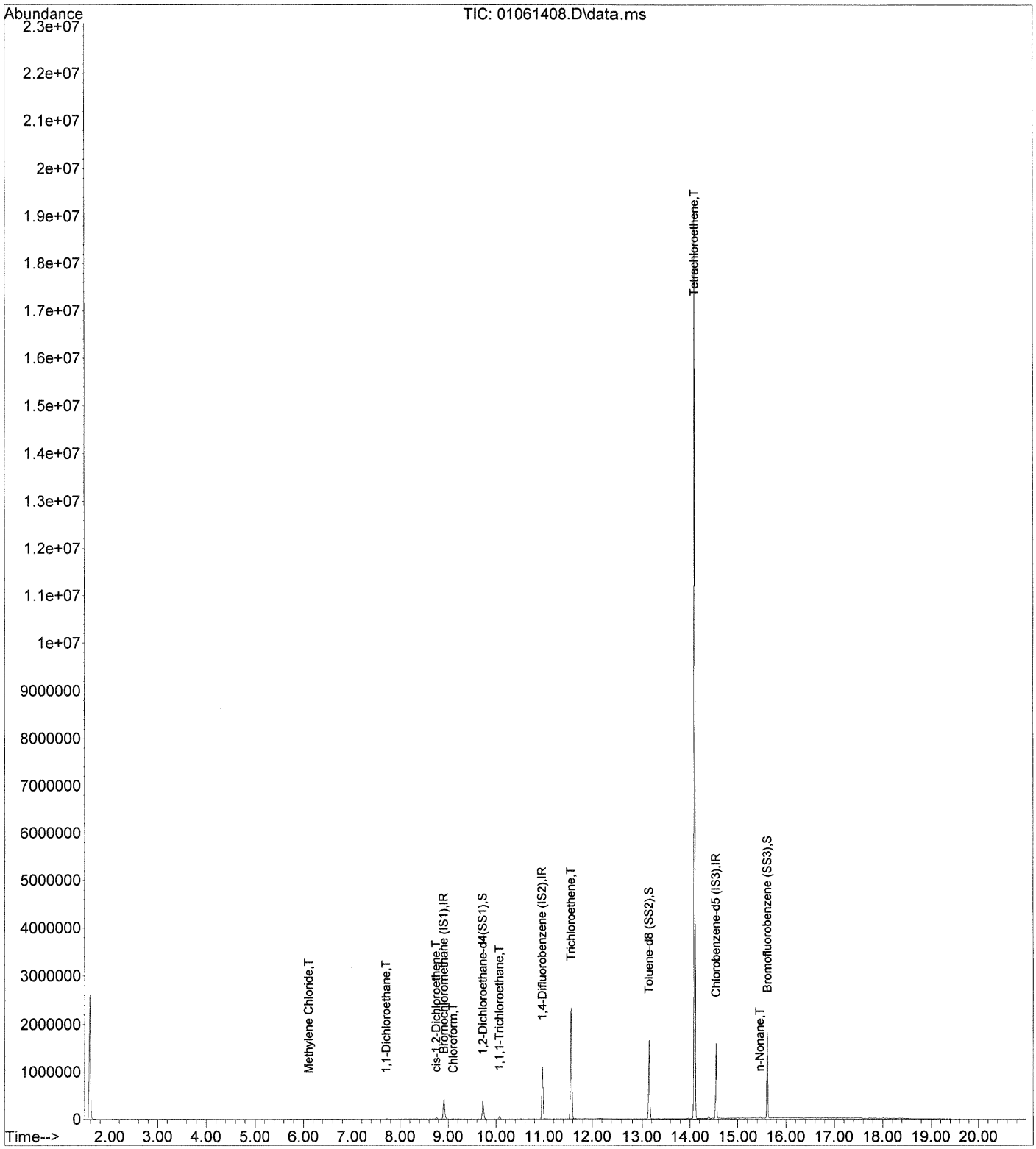
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061408.D
Acq On : 6 Jan 2014 10:58 Operator: WA
Sample : P1305675-001 (25mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:14:30 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061408.D
Acq On : 6 Jan 2014 10:58 Operator: WA
Sample : P1305675-001 (25mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:14:30 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	181777	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	931906	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	409210	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	283619	14.355 ng	0.00
Spiked Amount 12.500			Recovery	= 114.80%	
57) Toluene-d8 (SS2)	13.14	98	998689	11.456 ng	0.00
Spiked Amount 12.500			Recovery	= 91.68%	
73) Bromofluorobenzene (SS3)	15.61	174	448574	12.821 ng	0.00
Spiked Amount 12.500			Recovery	= 102.56%	

Target Compounds					Qvalue
2) Propene	1.93	42	644	N.D.	
3) Dichlorodifluoromethan...	2.05	85	2001	N.D.	
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	2.85	54	54	N.D.	
8) Bromomethane	3.20	94	57	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	0.00	45	0	N.D.	
11) Acetonitrile	4.26	41	321	N.D.	
12) Acrolein	0.00	56	0	N.D.	
13) Acetone	0.00	58	0	N.D.	
14) Trichlorofluoromethane	4.76	101	544	N.D.	
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	5.80	96	121	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.11	84	2241	0.094 ng	89
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	0.00	151	0	N.D.	
22) Carbon Disulfide	6.21	76	4107	N.D.	
23) trans-1,2-Dichloroethene	7.48	61	1572	N.D.	
24) 1,1-Dichloroethane	7.72	63	5350	0.130 ng	79
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	0.00	72	0	N.D.	
28) cis-1,2-Dichloroethene	8.76	61	23198	0.760 ng	96
29) Diisopropyl Ether	9.09	87	305	N.D.	
30) Ethyl Acetate	9.21	61	451	N.D.	
31) n-Hexane	0.00	57	0	N.D.	
32) Chloroform	9.10	83	5018	0.130 ng	98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	43688	1.218 ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	10.67	56	73	N.D.	
41) Benzene	10.52	78	4597	N.D.	
42) Carbon Tetrachloride	0.00	117	0	N.D.	
43) Cyclohexane	10.77	84	327	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

1/8/14

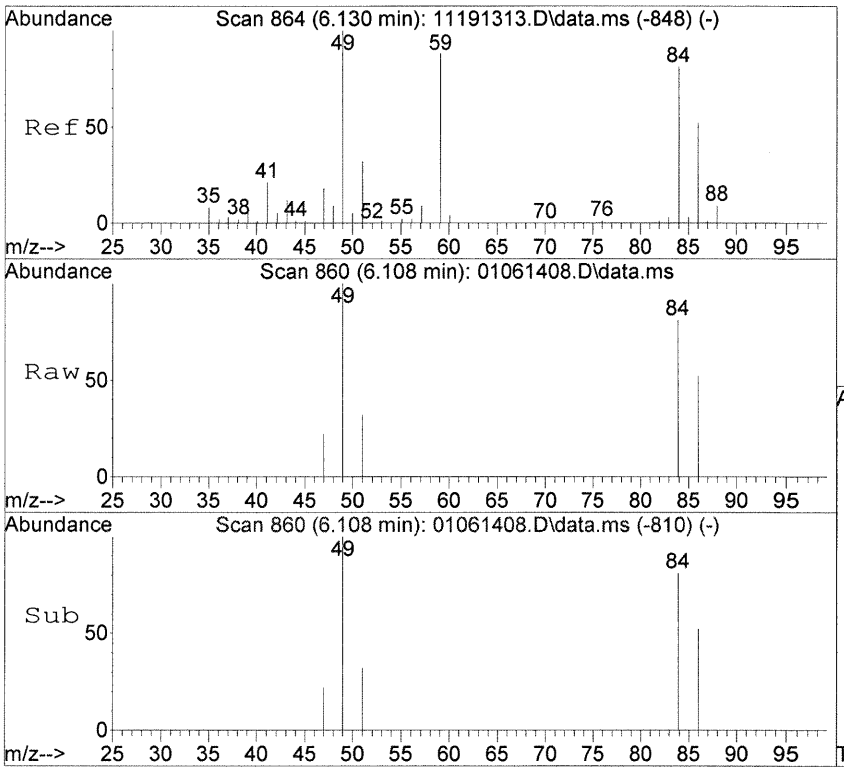
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061408.D
Acq On : 6 Jan 2014 10:58 Operator: WA
Sample : P1305675-001 (25mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:14:30 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	68	N.D.	
47) Trichloroethene	11.57	130	820296	28.402 ng	99
48) 1,4-Dioxane	11.67	88	57	N.D.	
49) 2,2,4-Trimethylpentane...	11.65	57	114	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	11.92	71	115	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	13.00	97	103	N.D.	
58) Toluene	13.23	91	2623	N.D.	
59) 2-Hexanone	13.47	43	1766	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D. d	
63) n-Octane	14.06	57	581	N.D.	
64) Tetrachloroethene	14.10	166	5221910	141.381 ng	98
65) Chlorobenzene	14.58	112	6125	N.D.	
66) Ethylbenzene	14.86	91	975	N.D.	
67) m- & p-Xylenes	14.98	91	2184	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.23	104	311	N.D.	
70) o-Xylene	15.30	91	823	N.D.	
71) n-Nonane	15.46	43	11087	0.181 ng	94
72) 1,1,2,2-Tetrachloroethane	15.29	83	122	N.D.	
74) Cumene	15.71	105	350	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	16.07	91	984	N.D.	
77) 3-Ethyltoluene	16.14	105	1989	N.D.	
78) 4-Ethyltoluene	16.17	105	513	N.D.	
79) 1,3,5-Trimethylbenzene	16.22	105	1034	N.D.	
80) alpha-Methylstyrene	16.33	118	314	N.D.	
81) 2-Ethyltoluene	16.35	105	889	N.D.	
82) 1,2,4-Trimethylbenzene	16.51	105	1582	N.D.	
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	16.60	91	181	N.D.	
85) 1,3-Dichlorobenzene	16.61	146	146	N.D.	
86) 1,4-Dichlorobenzene	16.67	146	105	N.D.	
87) sec-Butylbenzene	16.71	105	762	N.D.	
88) 4-Isopropyltoluene (p-...	16.84	119	437	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	957	N.D.	
90) 1,2-Dichlorobenzene	16.92	146	245	N.D.	
91) d-Limonene	16.93	68	169	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.55	57	3993	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	208	N.D.	
95) Naphthalene	18.35	128	2864	N.D.	
96) n-Dodecane	18.41	57	3622	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.09	55	419	N.D.	
99) tert-Butylbenzene	16.61	119	219	N.D.	
100) n-Butylbenzene	17.14	91	797	N.D.	

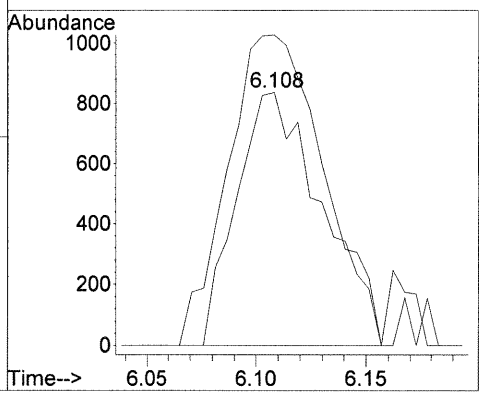
(#) = qualifier out of range (m) = manual integration (+) = signals summed

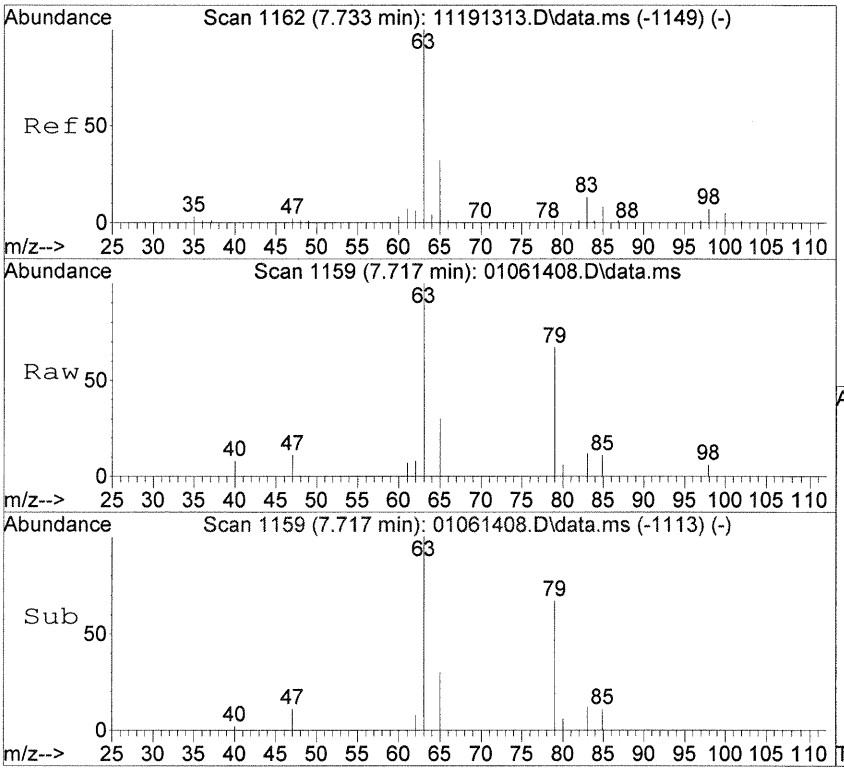


#19
Methylene Chloride
Concen: 0.09 ng
RT: 6.11 min Scan# 860
Delta R.T. 0.021 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 84 Resp: 2241

Ion	Ratio	Lower	Upper
84	100		
49	138.8	101.0	151.0

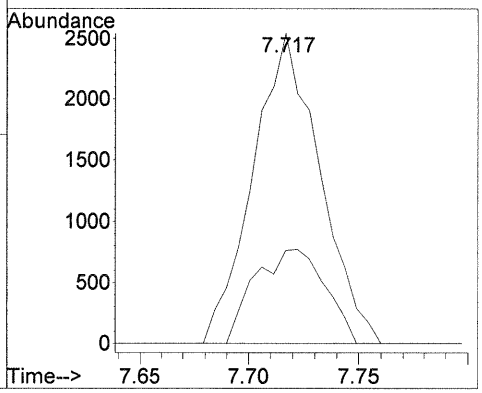


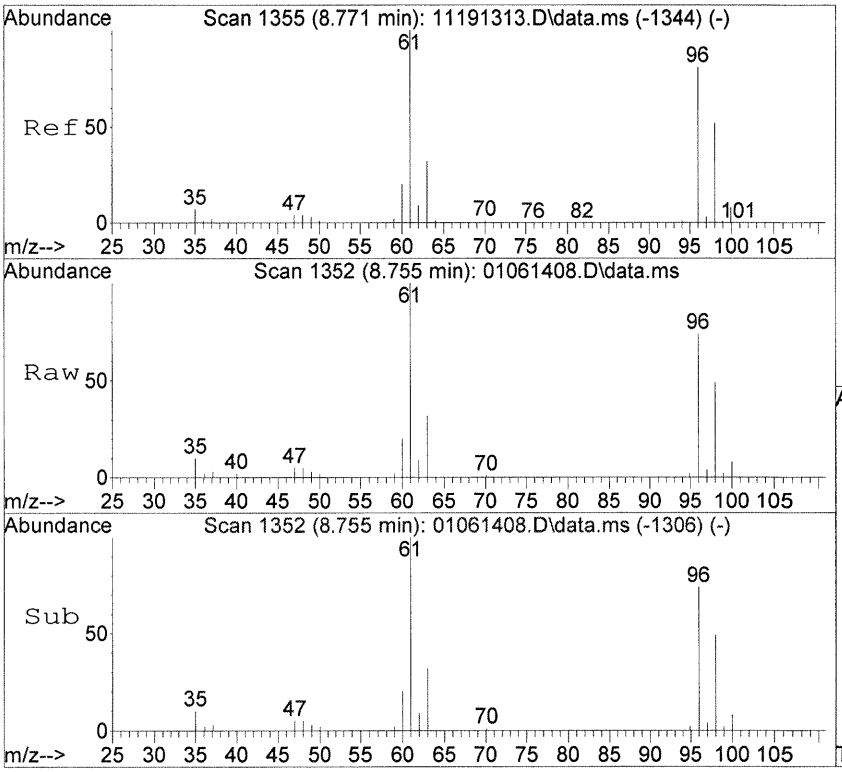


#24
1,1-Dichloroethane
Concen: 0.13 ng
RT: 7.72 min Scan# 1159
Delta R.T. 0.000 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 63 Resp: 5350

Ion	Ratio	Lower	Upper
63	100		
65	20.1	11.9	51.9

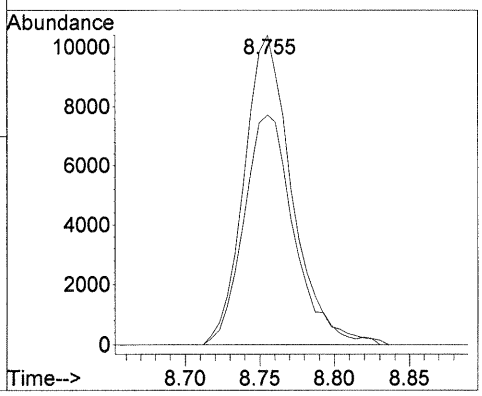


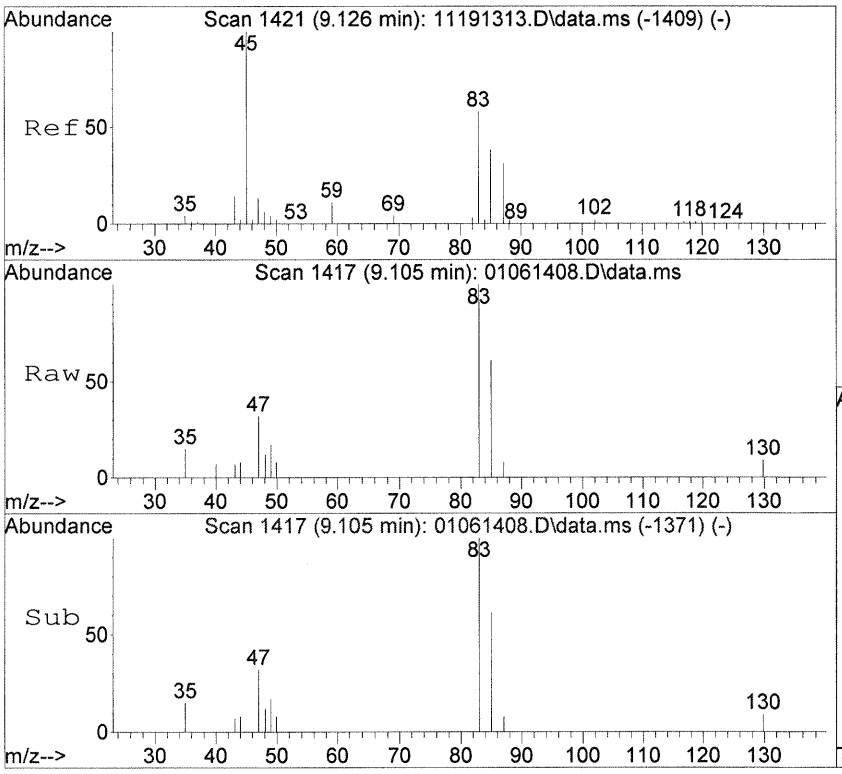


#28
cis-1,2-Dichloroethene
Concen: 0.76 ng
RT: 8.76 min Scan# 1352
Delta R.T. 0.000 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 61 Resp: 23198

Ion	Ratio	Lower	Upper
61	100		
96	78.1	61.4	101.4

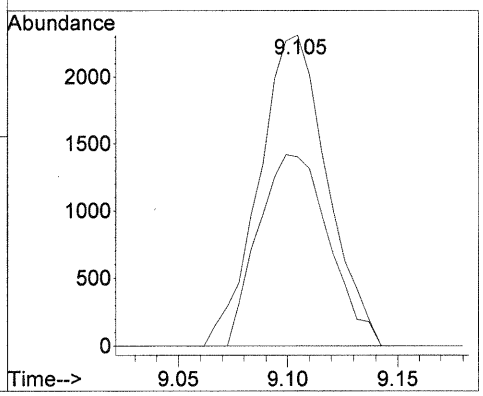


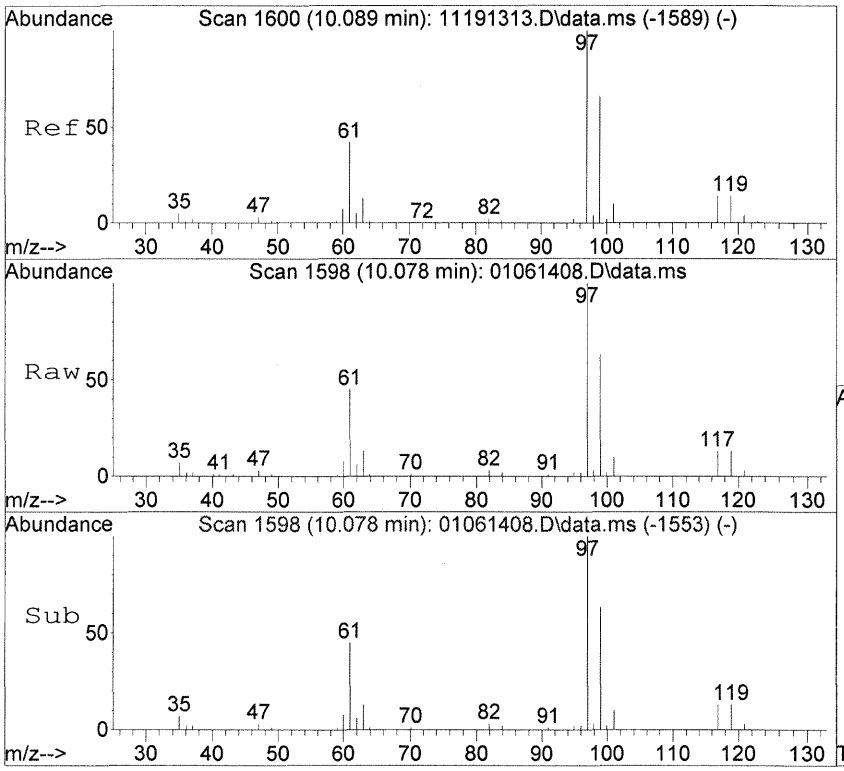


#32
Chloroform
Concen: 0.13 ng
RT: 9.10 min Scan# 1417
Delta R.T. 0.000 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 83 Resp: 5018

Ion	Ratio	Lower	Upper
83	100		
85	63.6	45.2	85.2

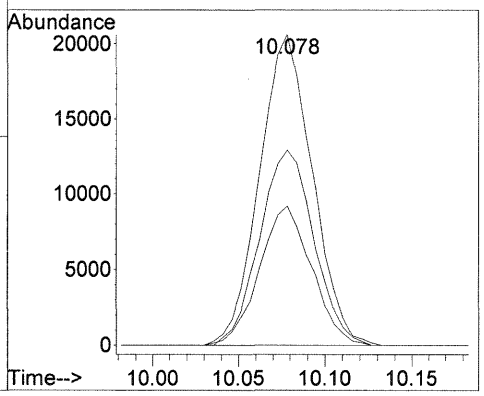


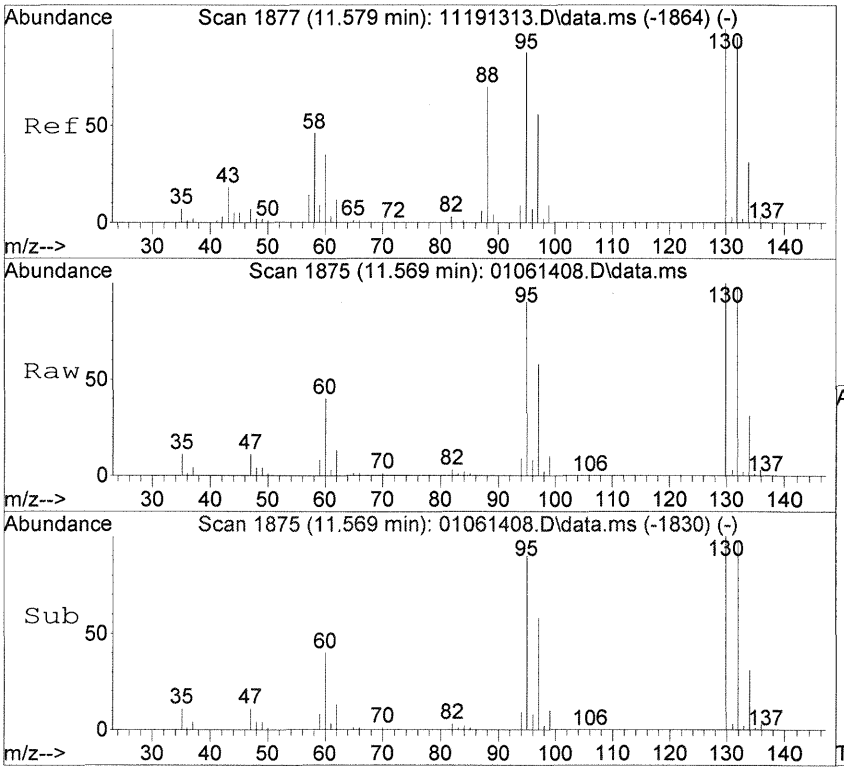


#38
1,1,1-Trichloroethane
Concen: 1.22 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 97 Resp: 43688

Ion	Ratio	Lower	Upper
97	100		
99	64.3	44.8	84.8
61	44.2	20.9	60.9

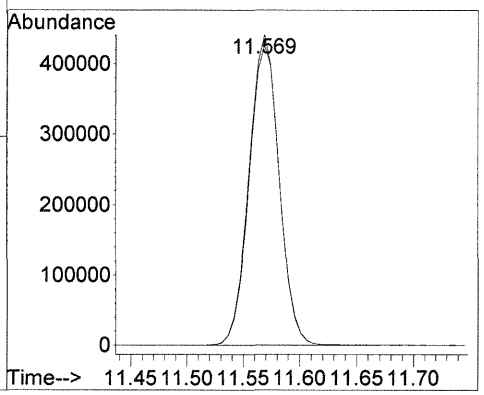


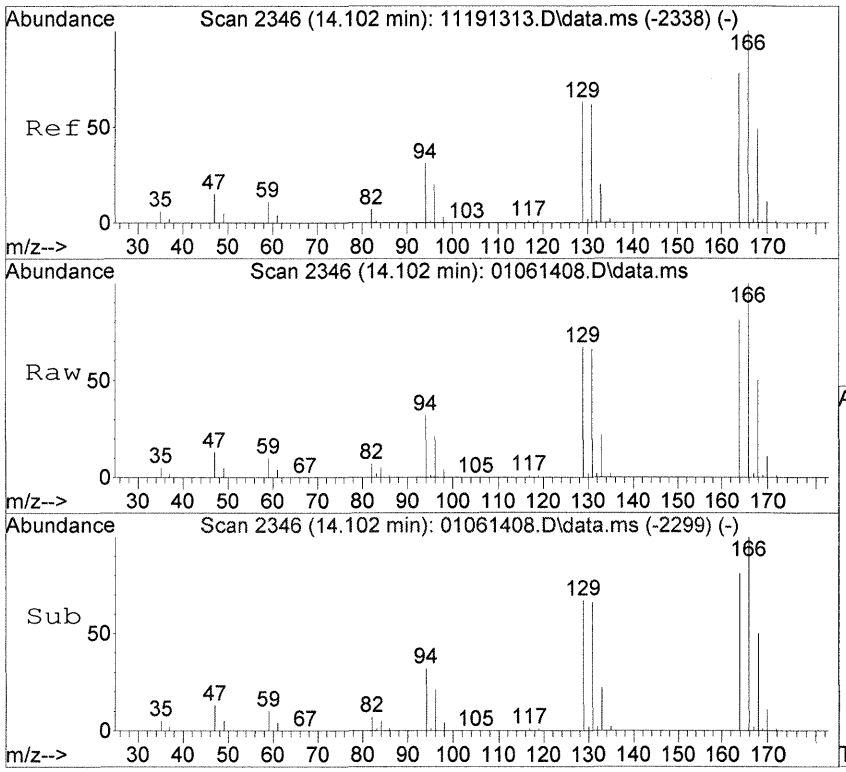


#47
Trichloroethene
Concen: 28.40 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion:130 Resp: 820296

Ion	Ratio	Lower	Upper
130	100		
132	97.5	76.5	116.5

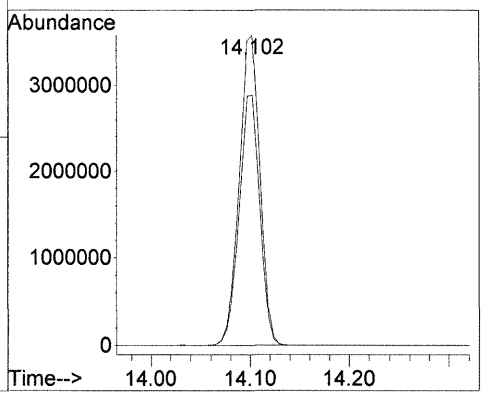


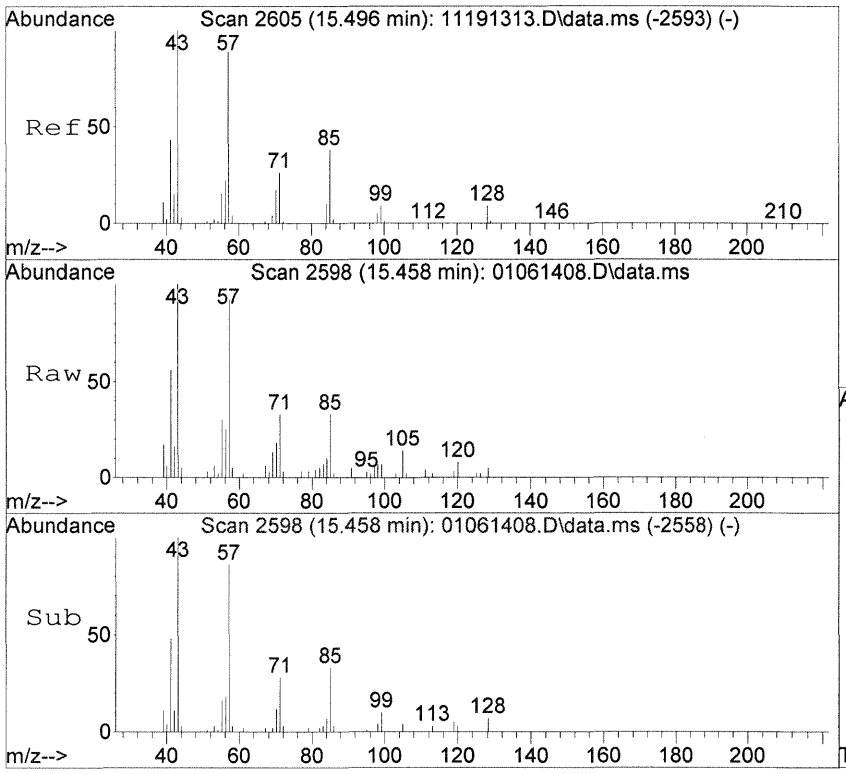


#64
Tetrachloroethene
Concen: 141.38 ng
RT: 14.10 min Scan# 2346
Delta R.T. 0.005 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion:166 Resp: 5221910

Ion	Ratio	Lower	Upper
166	100		
164	80.5	58.5	98.5

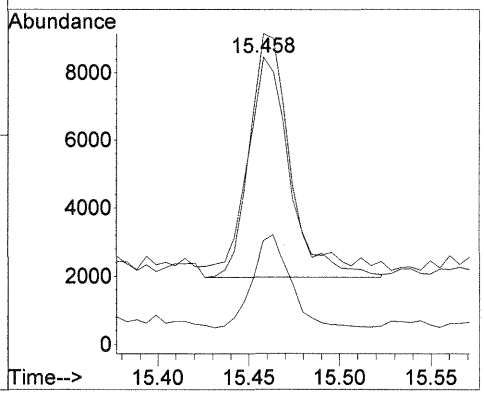




#71
n-Nonane
Concen: 0.18 ng
RT: 15.46 min Scan# 2598
Delta R.T. -0.032 min
Lab File: 01061408.D
Acq: 6 Jan 2014 10:58

Tgt Ion: 43 Resp: 11087

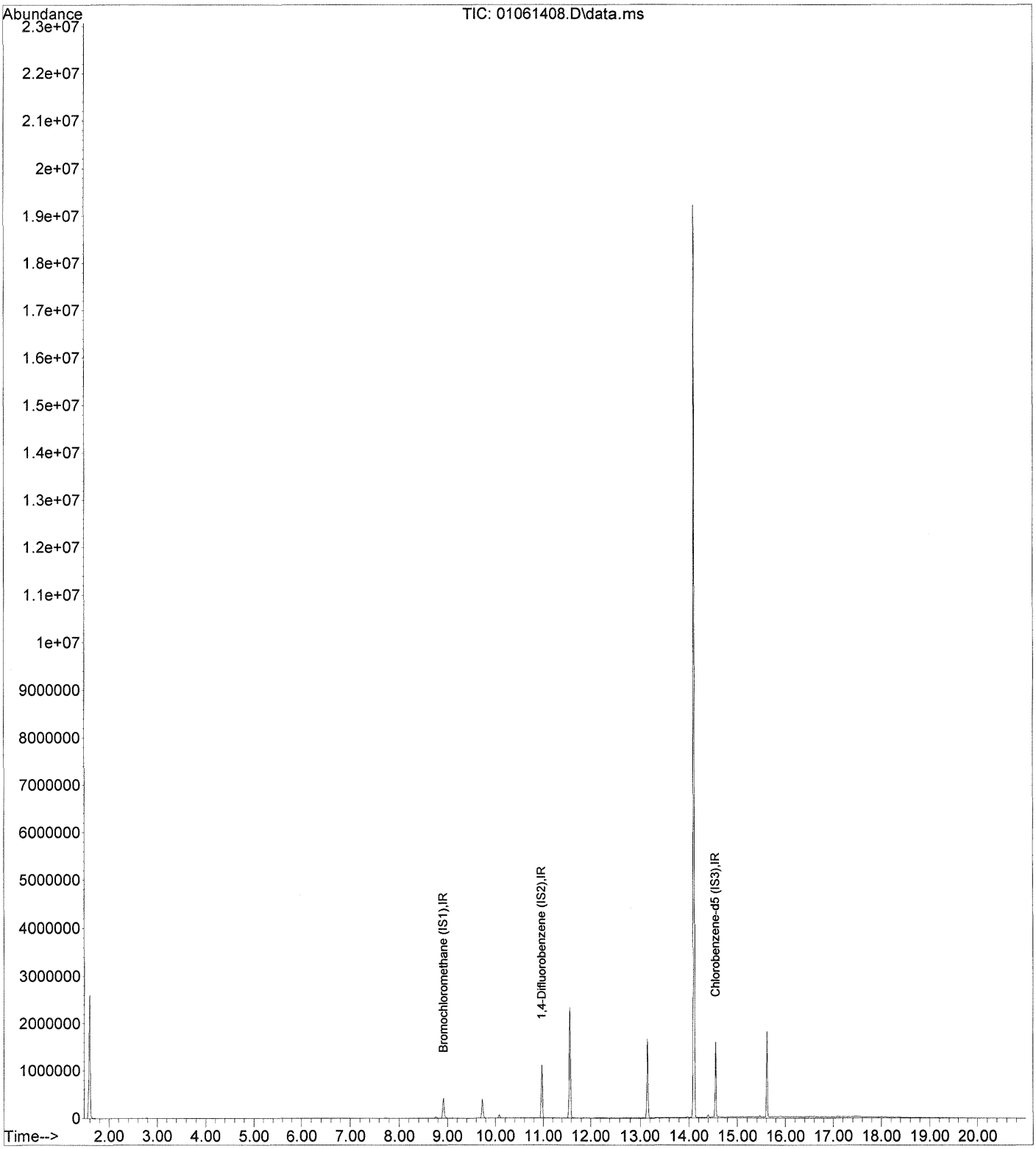
Ion	Ratio	Lower	Upper
43	100		
57	80.4	67.7	107.7
85	35.6	16.3	56.3



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061408.D
Acq On : 6 Jan 2014 10:58 Operator: WA
Sample : P1305675-001 (25mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:43:30 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061408.D
Acq On : 6 Jan 2014 10:58 Operator: WA
Sample : P1305675-001 (25mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:43:30 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	182037	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	932336	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	410309	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	11.10	56	619	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	12.47	55	93	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.76	91	221	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	15.78	77	612	N.D.	
26) 2-Chlorotoluene	16.07	91	1394	N.D.	
27) 4-Chlorotoluene	16.07	91	1394	N.D.	
28) Indan	16.96	117	67	N.D.	
29) Indene	17.04	115	55	N.D.	
30) 1,2,4,5-Tetramethylben...	17.76	119	1110	N.D.	
31) 1,2,3,4-Tetramethylben...	17.76	119	1083	N.D.	
32) 1,2,3,5-Tetramethylben...	18.08	119	5700	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

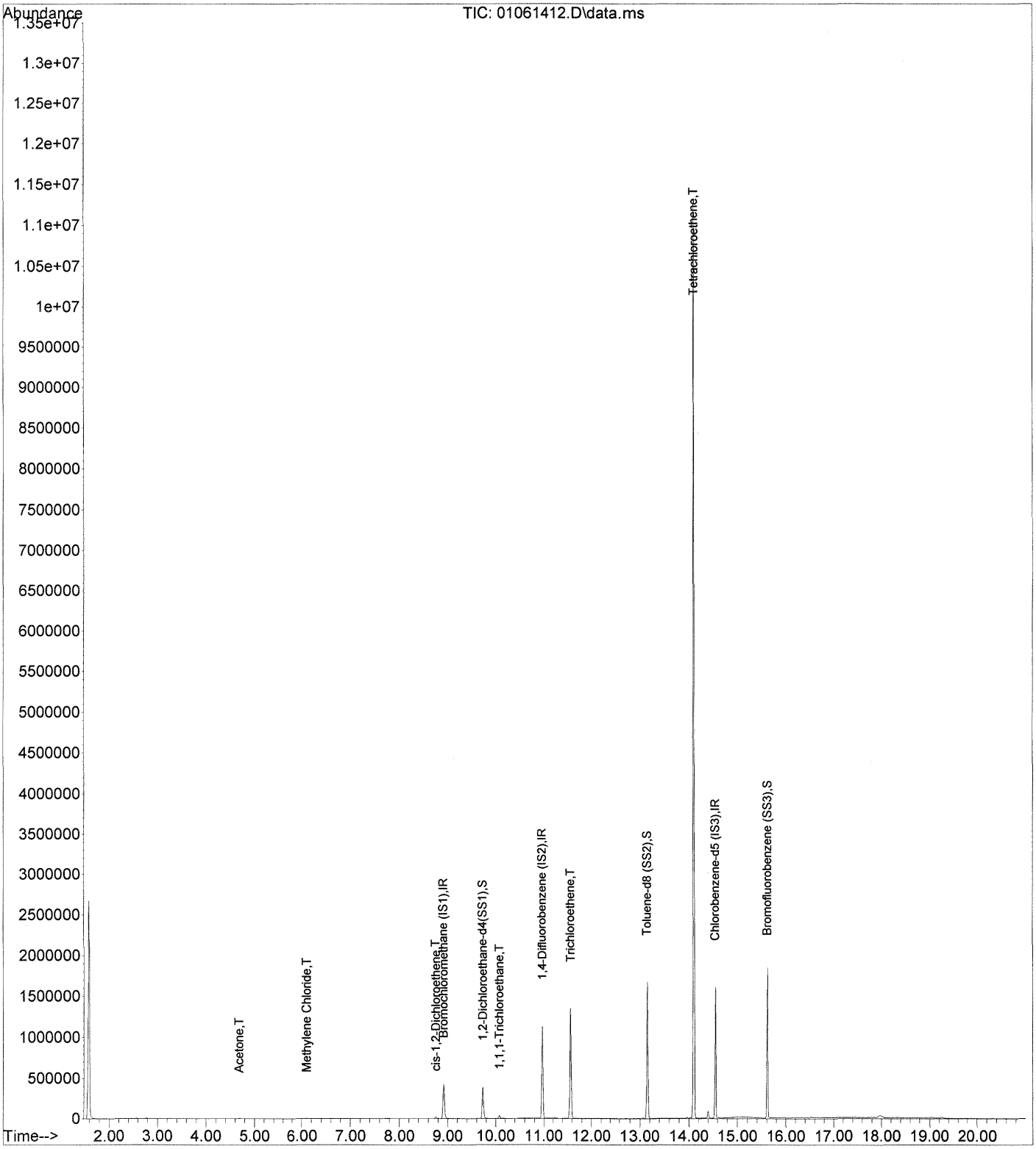
(#) = qualifier out of range (m) = manual integration (+) = signals summed

1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061412.D
Acq On : 6 Jan 2014 13:02 Operator: WA
Sample : P1305675-001 dil (15mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:15:01 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061412.D
Acq On : 6 Jan 2014 13:02 Operator: WA
Sample : P1305675-001 dil (15mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:15:01 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.91	130	185068	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	948686	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	408781	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	284431	14.140 ng	0.00
Spiked Amount 12.500			Recovery	= 113.12%	
57) Toluene-d8 (SS2)	13.14	98	1007905	11.574 ng	0.00
Spiked Amount 12.500			Recovery	= 92.56%	
73) Bromofluorobenzene (SS3)	15.61	174	447305	12.798 ng	0.00
Spiked Amount 12.500			Recovery	= 102.40%	

Target Compounds					Qvalue
2) Propene	1.92	42	1075	N.D.	
3) Dichlorodifluoromethan...	2.05	85	1145	N.D.	
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	3.20	94	363	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	0.00	45	0	N.D.	
11) Acetonitrile	4.20	41	49	N.D.	
12) Acrolein	4.41	56	224	N.D.	
13) Acetone	4.68	58	1863	0.103 ng	85
14) Trichlorofluoromethane	4.76	101	183	N.D.	
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	2434	0.100 ng	94
20) 3-Chloro-1-propene (Al...	6.16	41	56	N.D.	
21) Trichlorotrifluoroethane	0.00	151	0	N.D.	
22) Carbon Disulfide	6.22	76	4963	N.D.	
23) trans-1,2-Dichloroethene	7.46	61	785	N.D.	
24) 1,1-Dichloroethane	7.71	63	3042	N.D.	
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	0.00	72	0	N.D.	
28) cis-1,2-Dichloroethene	8.75	61	14194	0.457 ng	97
29) Diisopropyl Ether	9.10	87	130	N.D.	
30) Ethyl Acetate	9.22	61	363	N.D.	
31) n-Hexane	9.06	57	453	N.D.	
32) Chloroform	9.10	83	3100	N.D.	
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	26676	0.730 ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	10.74	56	64	N.D.	
41) Benzene	10.52	78	4610	N.D.	
42) Carbon Tetrachloride	0.00	117	0	N.D.	
43) Cyclohexane	10.79	84	190	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061412.D
Acq On : 6 Jan 2014 13:02 Operator: WA
Sample : P1305675-001 dil (15mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 08 14:15:01 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

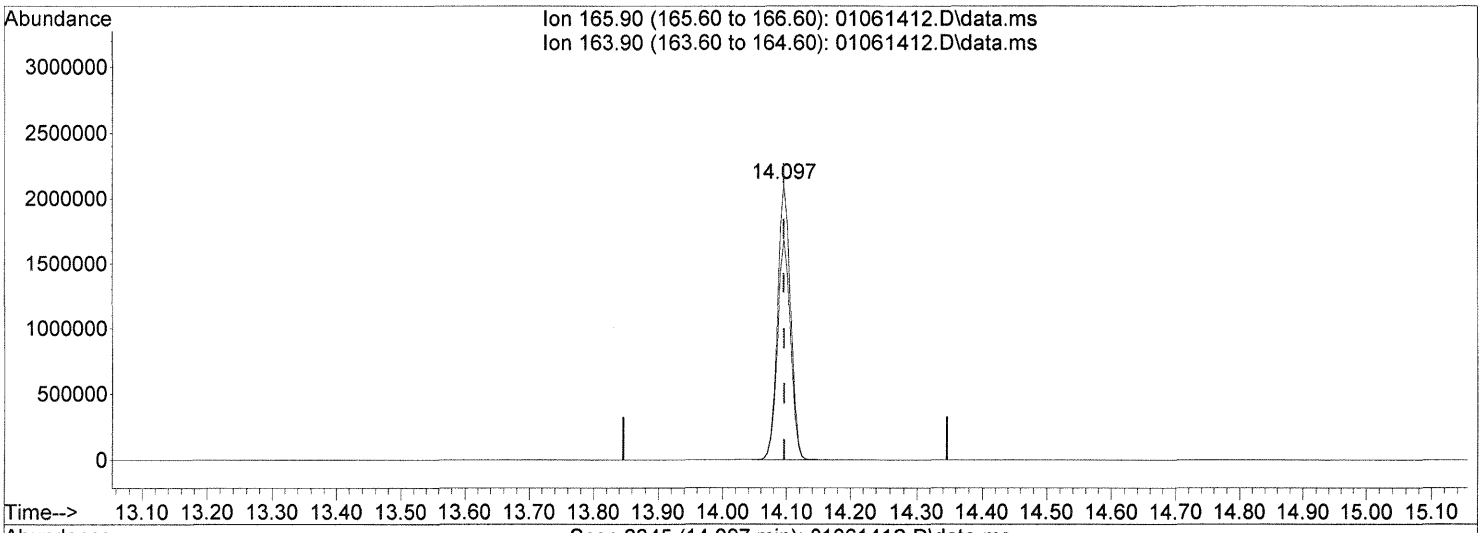
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	0.00	83	0	N.D. d	
47) Trichloroethene	11.57	130	478806	16.285 ng	98
48) 1,4-Dioxane	11.66	88	255	N.D.	
49) 2,2,4-Trimethylpentane...	11.68	57	105	N.D.	
50) Methyl Methacrylate	11.63	100	53	N.D.	
51) n-Heptane	11.91	71	187	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	13.05	97	56	N.D.	
58) Toluene	13.23	91	1996	N.D.	
59) 2-Hexanone	13.47	43	1662	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.97	43	5969	N.D.	
63) n-Octane	13.97	57	2207	N.D.	
64) Tetrachloroethene	14.10	166	2949247	79.933 ng	98
65) Chlorobenzene	14.58	112	3825	N.D.	
66) Ethylbenzene	14.86	91	901	N.D.	
67) m- & p-Xylenes	14.98	91	1602	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.23	104	300	N.D.	
70) o-Xylene	15.30	91	1206	N.D.	
71) n-Nonane	15.46	43	3111	N.D.	
72) 1,1,2,2-Tetrachloroethane	15.29	83	222	N.D.	
74) Cumene	15.72	105	564	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	16.07	91	640	N.D.	
77) 3-Ethyltoluene	16.14	105	694	N.D.	
78) 4-Ethyltoluene	16.17	105	522	N.D.	
79) 1,3,5-Trimethylbenzene	16.23	105	579	N.D.	
80) alpha-Methylstyrene	16.33	118	271	N.D.	
81) 2-Ethyltoluene	16.36	105	248	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	998	N.D.	
83) n-Decane	16.60	57	1325	N.D.	
84) Benzyl Chloride	16.61	91	332	N.D.	
85) 1,3-Dichlorobenzene	16.61	146	167	N.D.	
86) 1,4-Dichlorobenzene	16.66	146	135	N.D.	
87) sec-Butylbenzene	16.72	105	499	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	391	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	656	N.D.	
90) 1,2-Dichlorobenzene	16.92	146	176	N.D.	
91) d-Limonene	16.93	68	380	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.55	57	607	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	151	N.D.	
95) Naphthalene	18.35	128	1220	N.D.	
96) n-Dodecane	18.40	57	687	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.10	55	554	N.D.	
99) tert-Butylbenzene	16.51	119	1405	N.D.	
100) n-Butylbenzene	17.14	91	1023	N.D.	

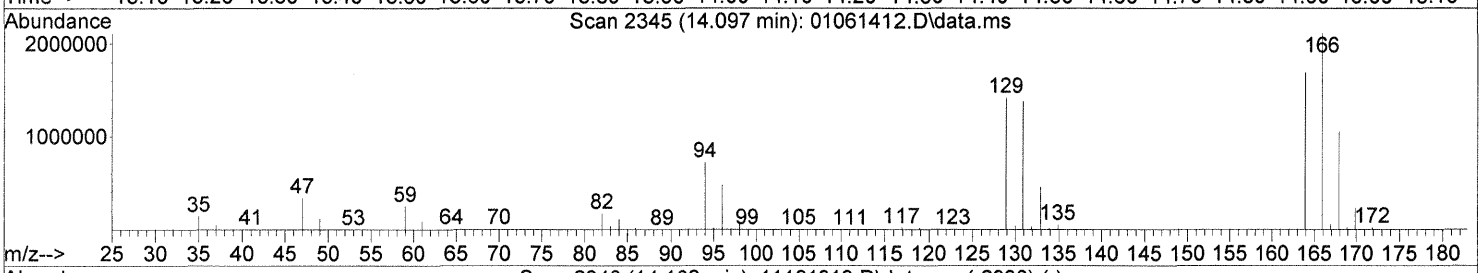
(#) = qualifier out of range (m) = manual integration (+) = signals summed

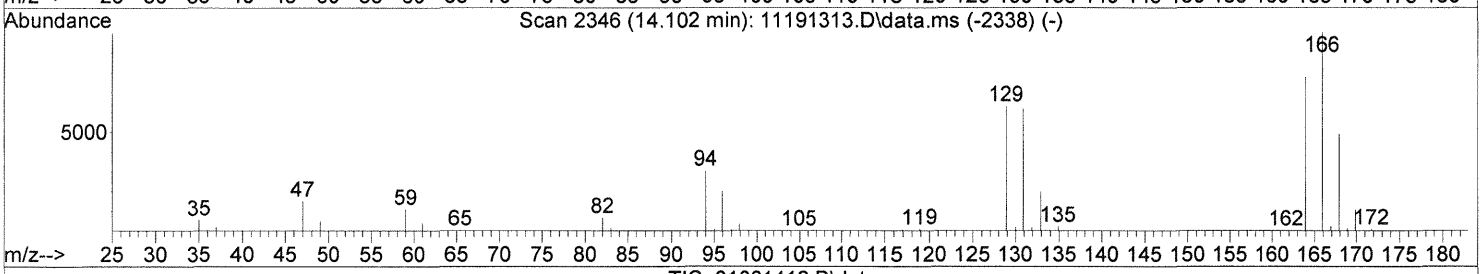
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2014_01\06\01061412.D
Acq On : 6 Jan 2014 13:02 Operator: WA
Sample : P1305675-001 dil (15mL)
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 07 06:39:00 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 01061412.D\data.ms

(64) Tetrachloroethene (T)

14.097min (0.000) 79.93ng

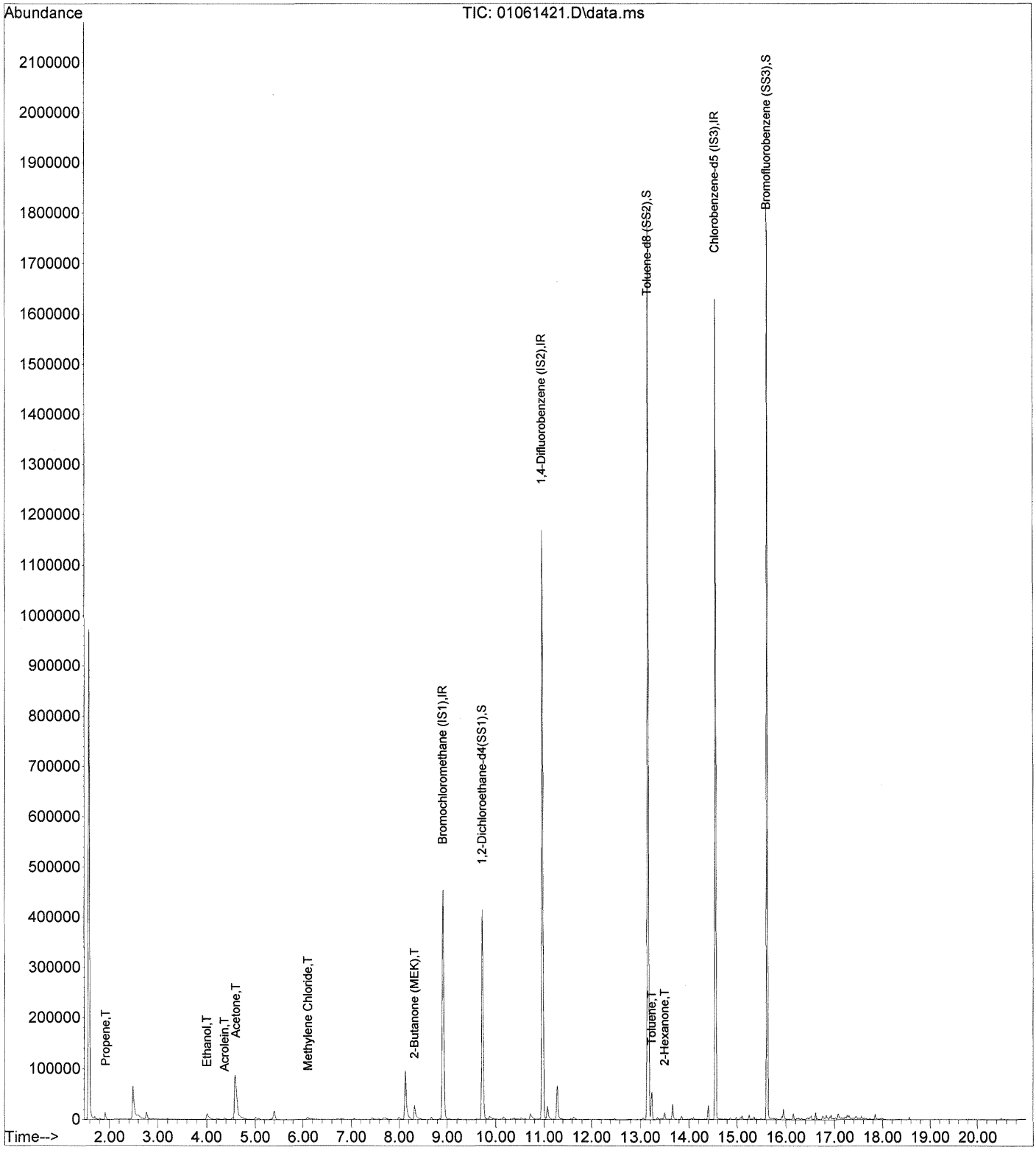
response 2949247

Ion	Exp%	Act%
165.90	100	100
163.90	78.50	79.87
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 08 14:16:32 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 08 14:16:32 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	191296	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	983607	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	420395	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	302058	14.527 ng	0.00
Spiked Amount 12.500			Recovery	= 116.24%	
57) Toluene-d8 (SS2)	13.14	98	1060655	11.843 ng	0.00
Spiked Amount 12.500			Recovery	= 94.72%	
73) Bromofluorobenzene (SS3)	15.61	174	450470	12.533 ng	0.00
Spiked Amount 12.500			Recovery	= 100.24%	

Target Compounds					Qvalue
2) Propene	1.92	42	4463	0.165 ng	92
3) Dichlorodifluoromethan...	2.05	85	212	N.D.	
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	3.19	94	849	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	4.00	45	20830	1.121 ng	100
11) Acetonitrile	4.21	41	3163	N.D.	
12) Acrolein	4.37	56	3747	0.240 ng	98
13) Acetone	4.60	58	31950m	1.717 ng	
14) Trichlorofluoromethane	0.00	101	0	N.D.	
15) 2-Propanol (Isopropanol)	5.32	45	3698	N.D.	
16) Acrylonitrile	5.40	53	49	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	2806	0.112 ng	90
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	0.00	151	0	N.D.	
22) Carbon Disulfide	6.18	76	4089	N.D.	
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.	
24) 1,1-Dichloroethane	0.00	63	0	N.D.	
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	8.32	72	12905	0.733 ng	92
28) cis-1,2-Dichloroethene	8.76	61	378	N.D.	
29) Diisopropyl Ether	0.00	87	0	N.D.	
30) Ethyl Acetate	9.22	61	208	N.D.	
31) n-Hexane	9.05	57	505	N.D.	
32) Chloroform	0.00	83	0	N.D.	
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	0.00	56	0	N.D. d	
41) Benzene	10.52	78	3157	N.D.	
42) Carbon Tetrachloride	0.00	117	0	N.D.	
43) Cyclohexane	10.77	84	329	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

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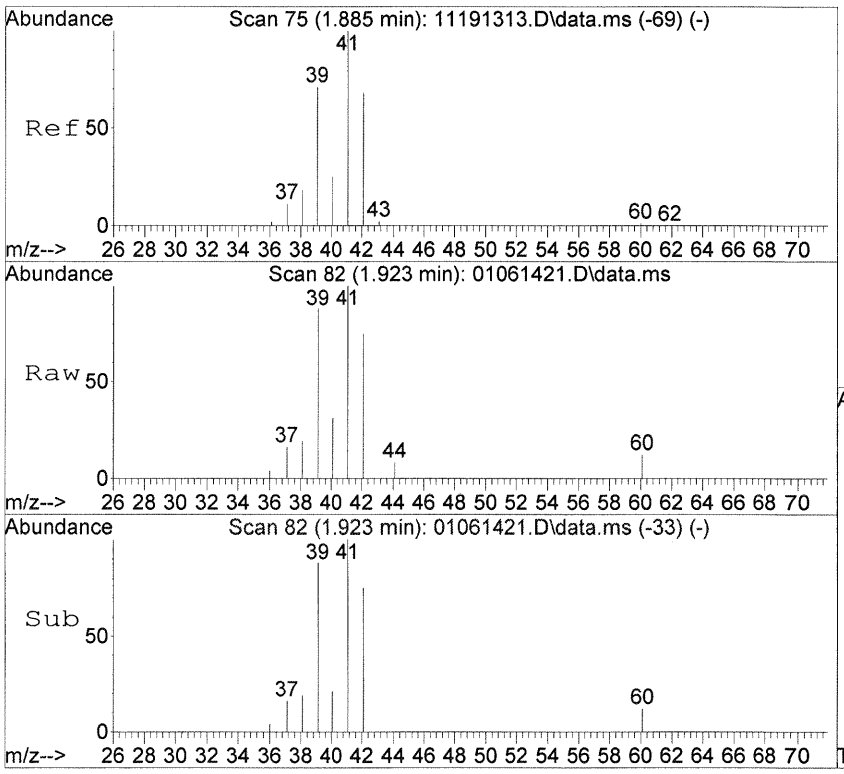
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 08 14:16:32 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	0.00	83	0	N.D.	
47) Trichloroethene	11.57	130	515	N.D.	
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	11.63	57	878	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	11.93	71	217	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	12.49	58	388	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	35919	0.308 ng	99
59) 2-Hexanone	13.49	43	9550	0.147 ng	91
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.99	43	56	N.D.	
63) n-Octane	14.05	57	178	N.D.	
64) Tetrachloroethene	14.09	166	1021	N.D.	
65) Chlorobenzene	14.58	112	49	N.D.	
66) Ethylbenzene	14.86	91	1846	N.D.	
67) m- & p-Xylenes	14.98	91	2919	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.23	104	478	N.D.	
70) o-Xylene	15.30	91	1161	N.D.	
71) n-Nonane	15.48	43	942	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.71	105	315	N.D.	
75) alpha-Pinene	16.15	93	2174	N.D.	
76) n-Propylbenzene	16.07	91	961	N.D.	
77) 3-Ethyltoluene	16.14	105	1448	N.D.	
78) 4-Ethyltoluene	16.14	105	1448	N.D.	
79) 1,3,5-Trimethylbenzene	16.23	105	586	N.D.	
80) alpha-Methylstyrene	16.33	118	57	N.D.	
81) 2-Ethyltoluene	16.36	105	422	N.D.	
82) 1,2,4-Trimethylbenzene	16.51	105	1215	N.D.	
83) n-Decane	16.61	57	3518	N.D.	
84) Benzyl Chloride	16.77	91	116	N.D.	
85) 1,3-Dichlorobenzene	16.67	146	109	N.D.	
86) 1,4-Dichlorobenzene	16.67	146	109	N.D.	
87) sec-Butylbenzene	16.82	105	657	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	3654	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	657	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	16.94	68	1466	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.56	57	1446	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	121	N.D.	
95) Naphthalene	18.35	128	969	N.D.	
96) n-Dodecane	18.40	57	256	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.09	55	1073	N.D.	
99) tert-Butylbenzene	16.51	119	366	N.D.	
100) n-Butylbenzene	17.15	91	700	N.D.	

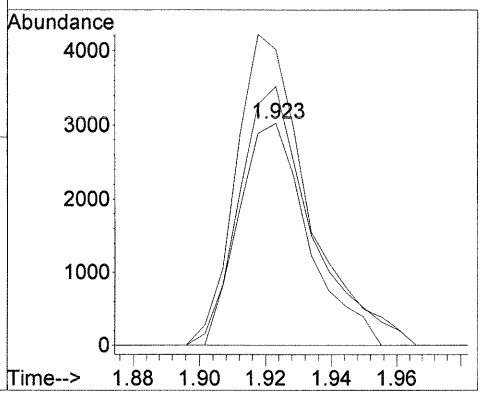
(#) = qualifier out of range (m) = manual integration (+) = signals summed

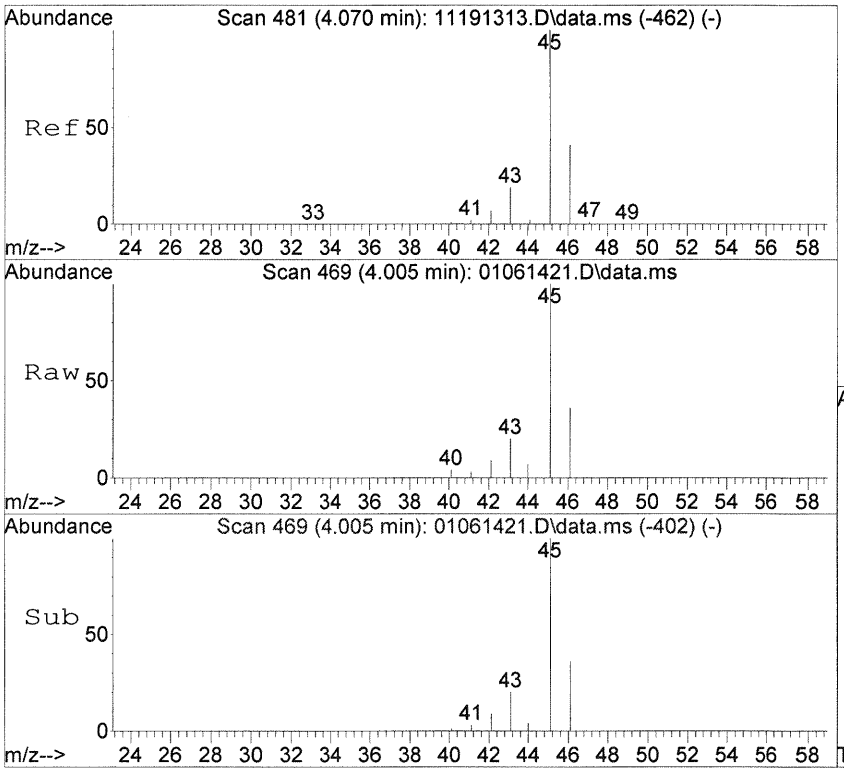


#2
Propene
Concen: 0.17 ng
RT: 1.92 min Scan# 82
Delta R.T. 0.016 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 42 Resp: 4463

Ion	Ratio	Lower	Upper
42	100		
39	120.7	85.9	125.9
41	144.5	129.1	169.1

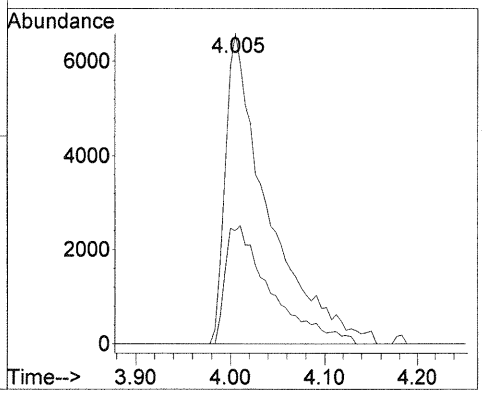


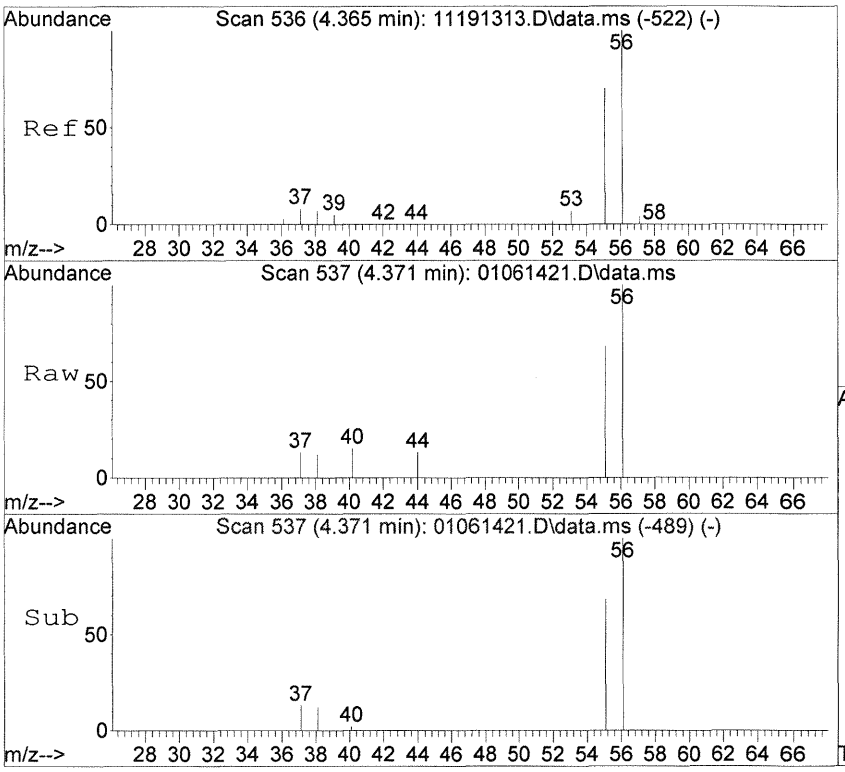


#10
Ethanol
Concen: 1.12 ng
RT: 4.00 min Scan# 469
Delta R.T. 0.011 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 45 Resp: 20830

Ion	Ratio	Lower	Upper
45	100		
46	40.8	21.0	61.0

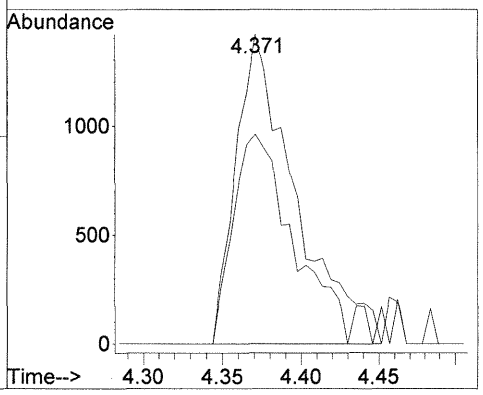


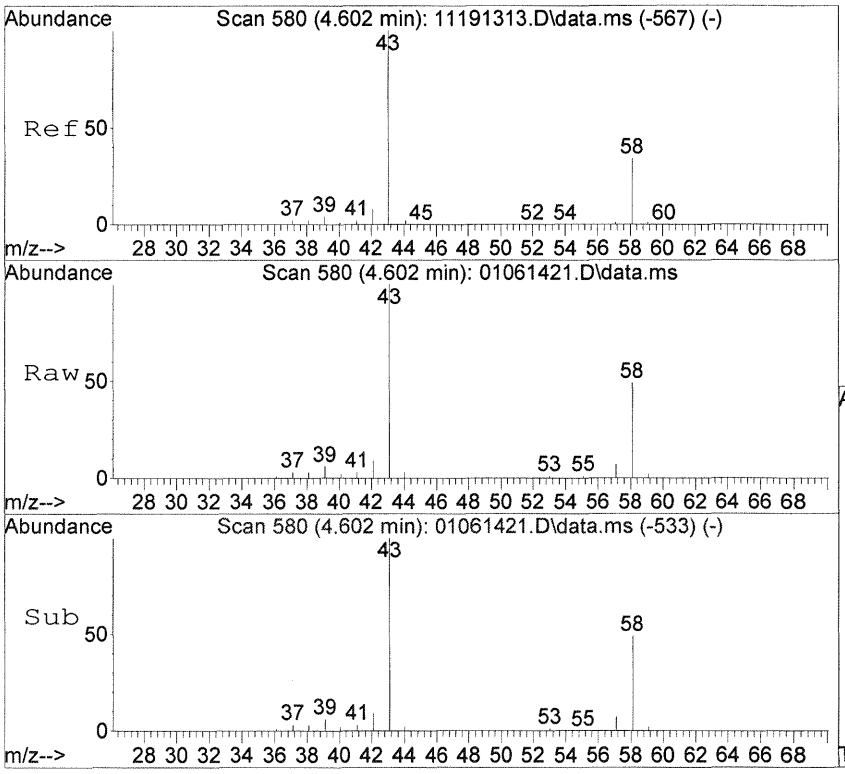


#12
Acrolein
Concen: 0.24 ng
RT: 4.37 min Scan# 537
Delta R.T. 0.006 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 56 Resp: 3747

Ion	Ratio	Lower	Upper
56	100		
55	68.2	49.8	89.8

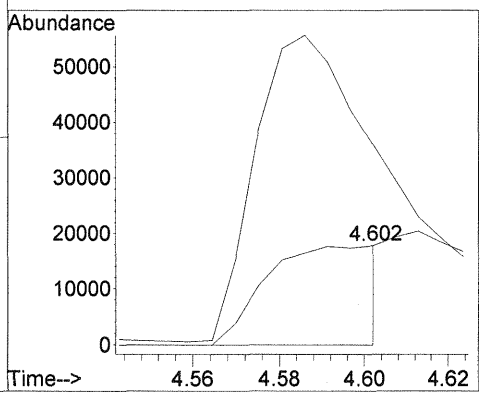


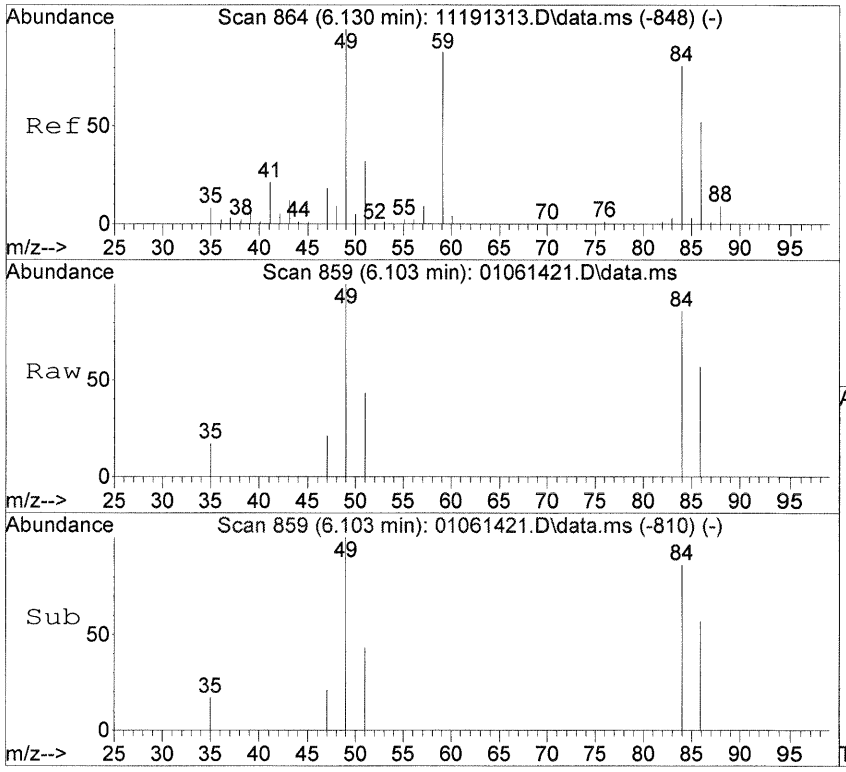


#13
Acetone
Concen: 1.72 ng m
RT: 4.60 min Scan# 580
Delta R.T. 0.005 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 58 Resp: 31950

Ion	Ratio	Lower	Upper
58	100		
43	0.0	265.2	325.2#

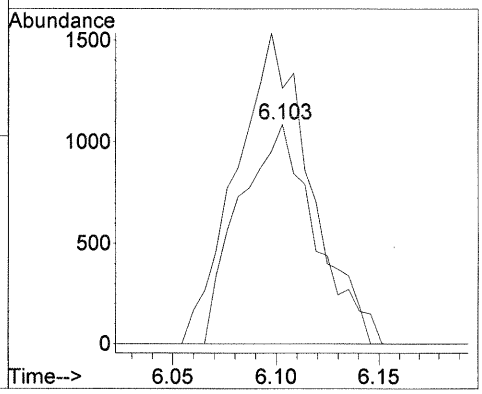


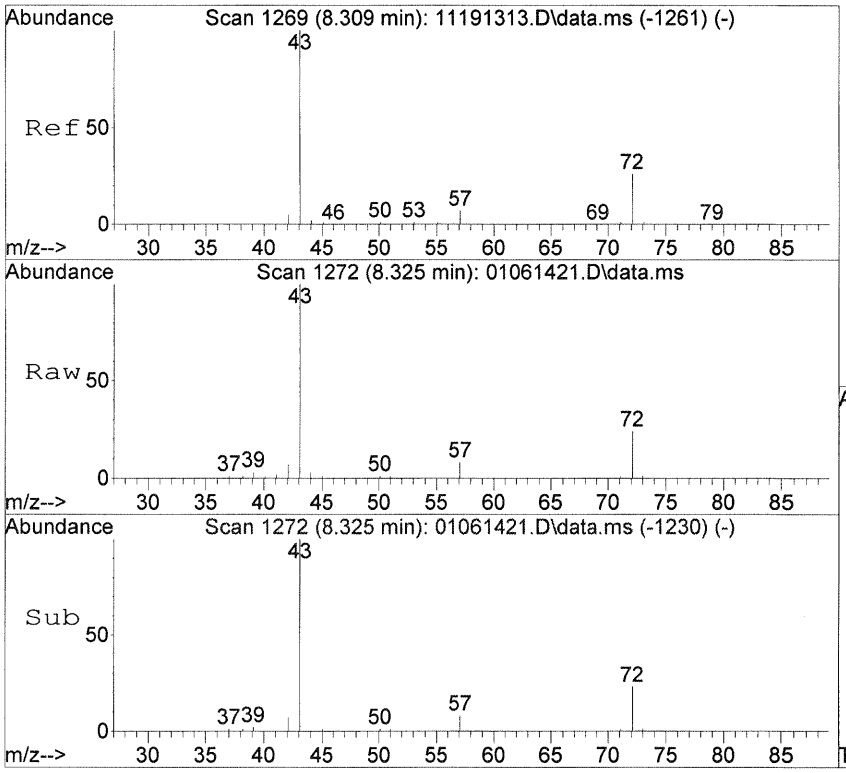


#19
Methylene Chloride
Concen: 0.11 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 84 Resp: 2806

Ion	Ratio	Lower	Upper
84	100		
49	137.0	101.0	151.0

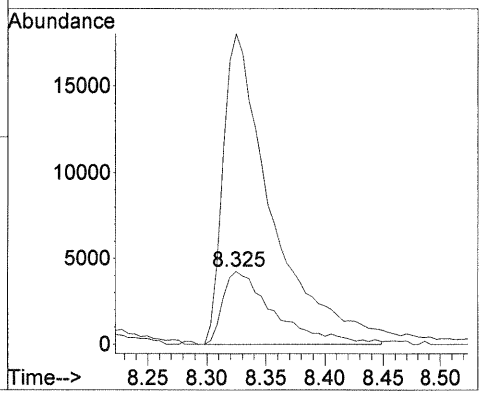


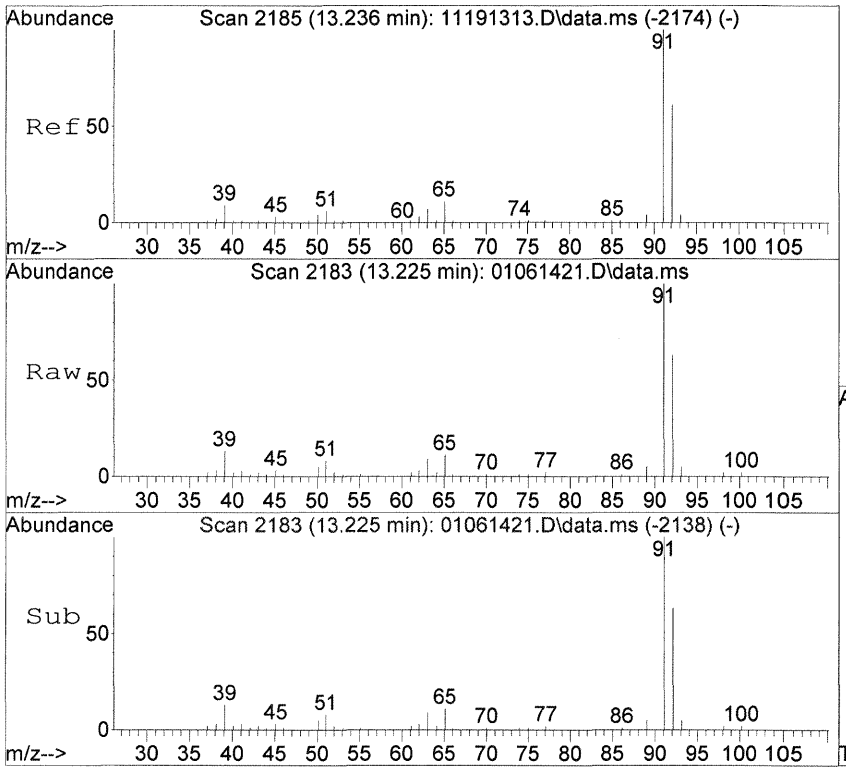


#27
2-Butanone (MEK)
Concen: 0.73 ng
RT: 8.32 min Scan# 1272
Delta R.T. -0.021 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 72 Resp: 12905

Ion	Ratio	Lower	Upper
72	100		
43	418.1	378.8	418.8

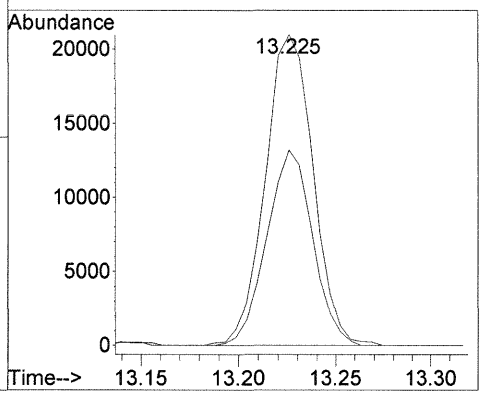


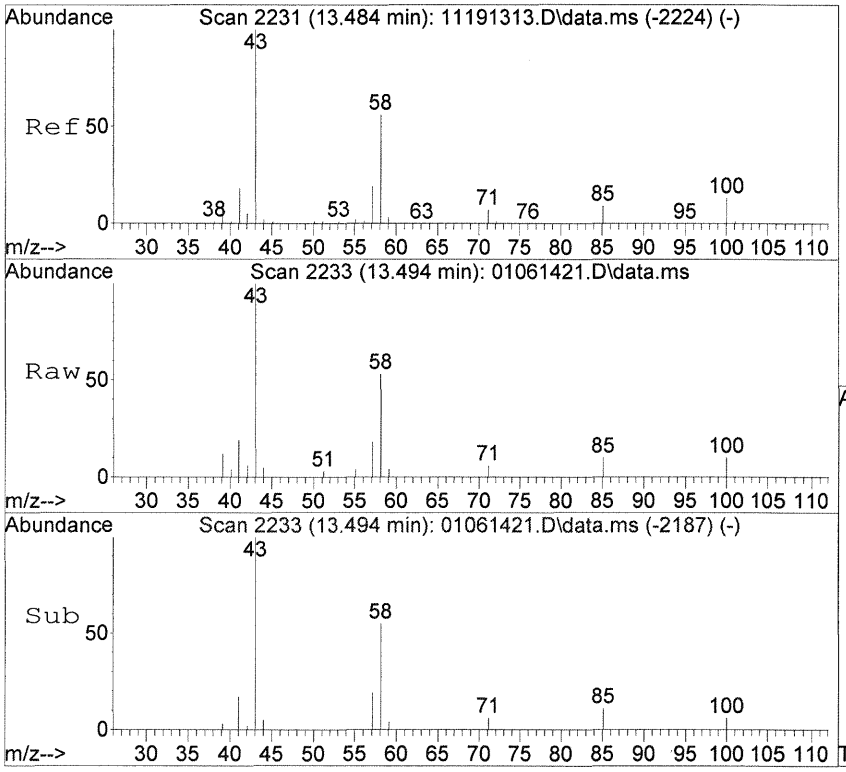


#58
Toluene
Concen: 0.31 ng
RT: 13.23 min Scan# 2183
Delta R.T. -0.005 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 91 Resp: 35919

Ion	Ratio	Lower	Upper
91	100		
92	60.3	40.8	80.8

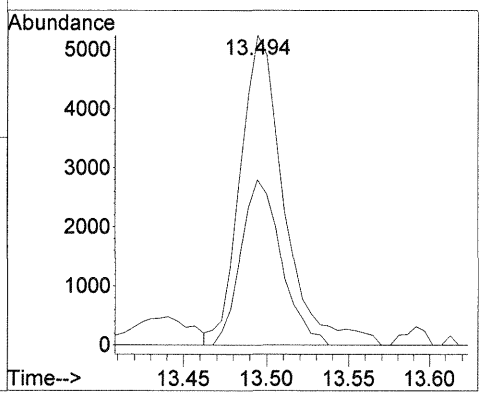




#59
2-Hexanone
Concen: 0.15 ng
RT: 13.49 min Scan# 2233
Delta R.T. 0.000 min
Lab File: 01061421.D
Acq: 6 Jan 2014 18:05

Tgt Ion: 43 Resp: 9550

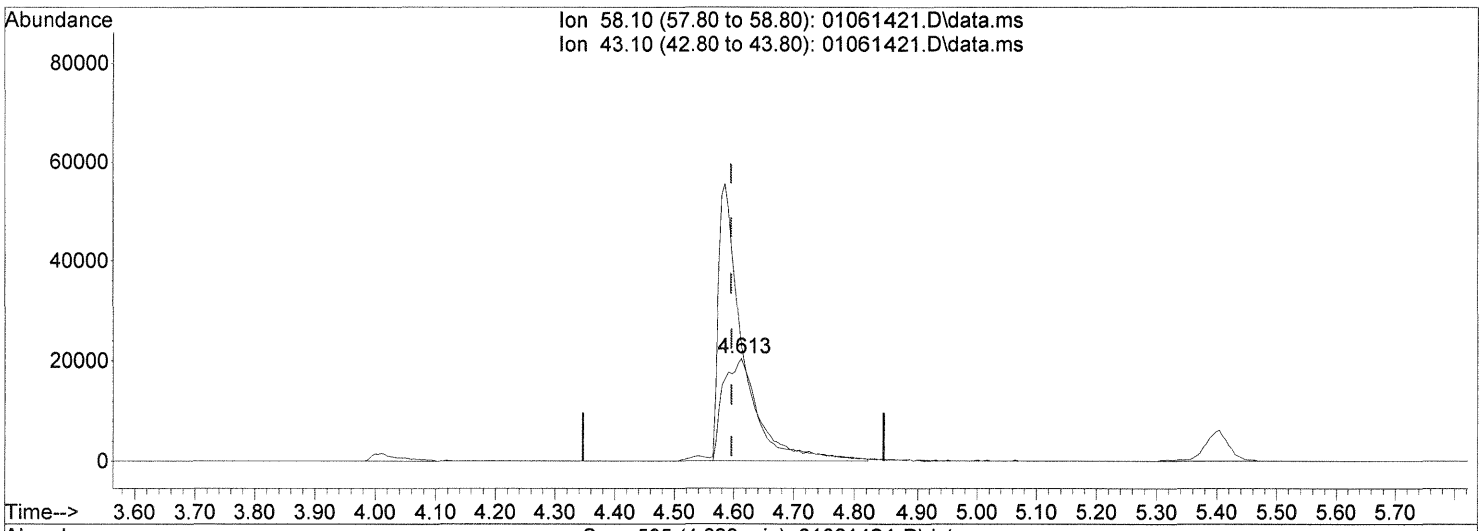
Ion	Ratio	Lower	Upper
43	100		
58	49.3	36.0	76.0

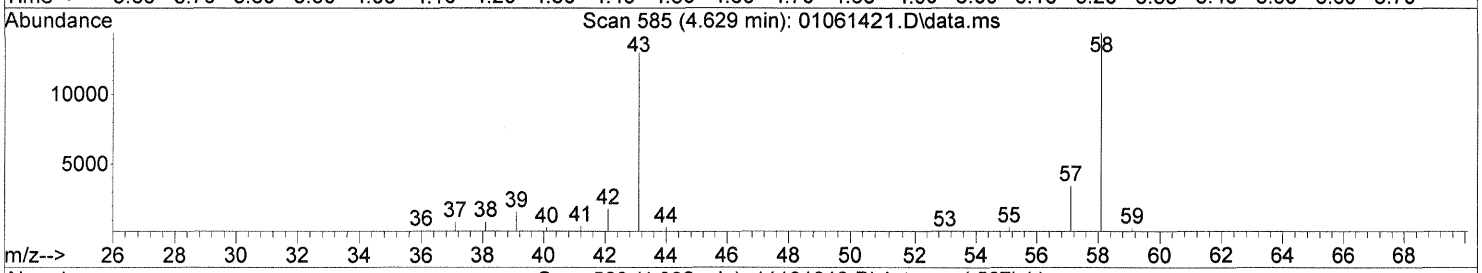


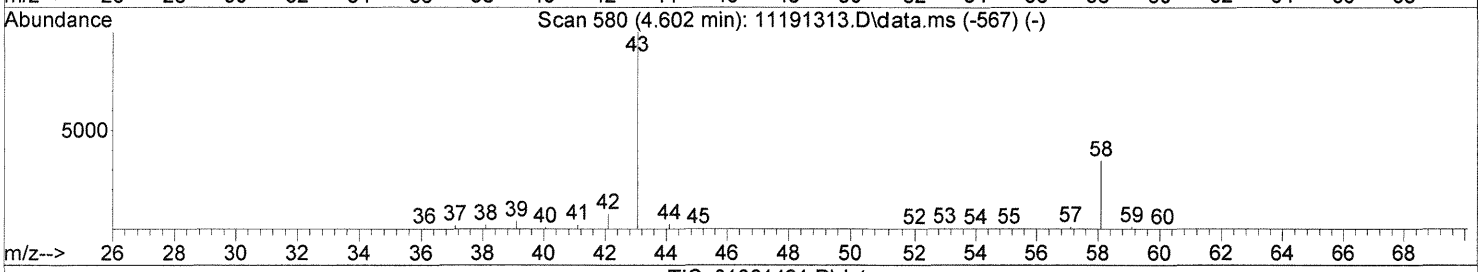
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 07 06:39:21 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 01061421.D\data.ms

(13) Acetone (T)

4.613min (+0.016) 4.71ng

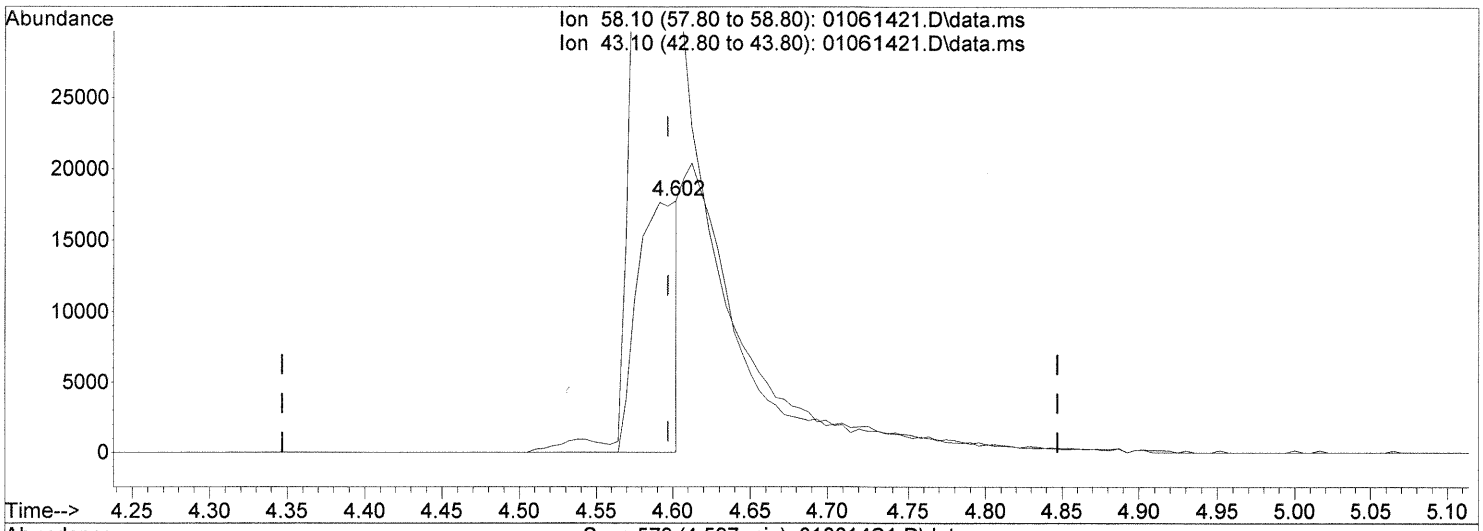
response 87688

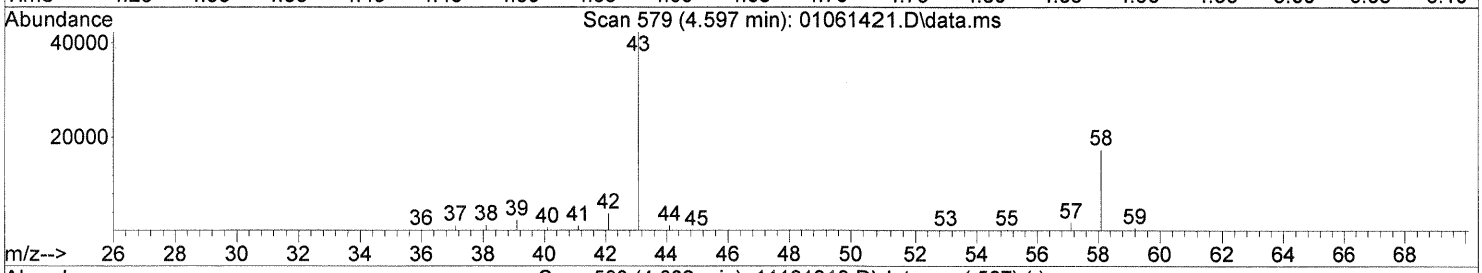
Ion	Exp%	Act%
58.10	100	100
43.10	295.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

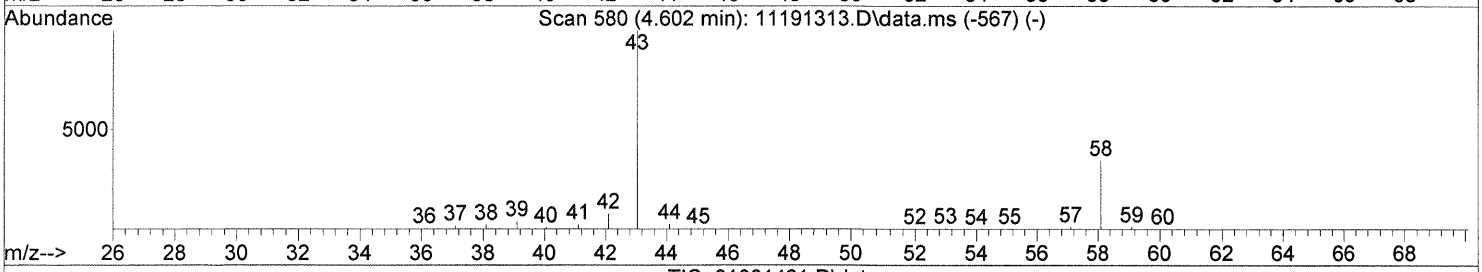
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 07 06:39:21 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 01061421.D\data.ms

(13) Acetone (T)

4.602min (+0.005) 1.72ng m

response 31950

Ion	Exp%	Act%
58.10	100	100
43.10	295.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

IPC

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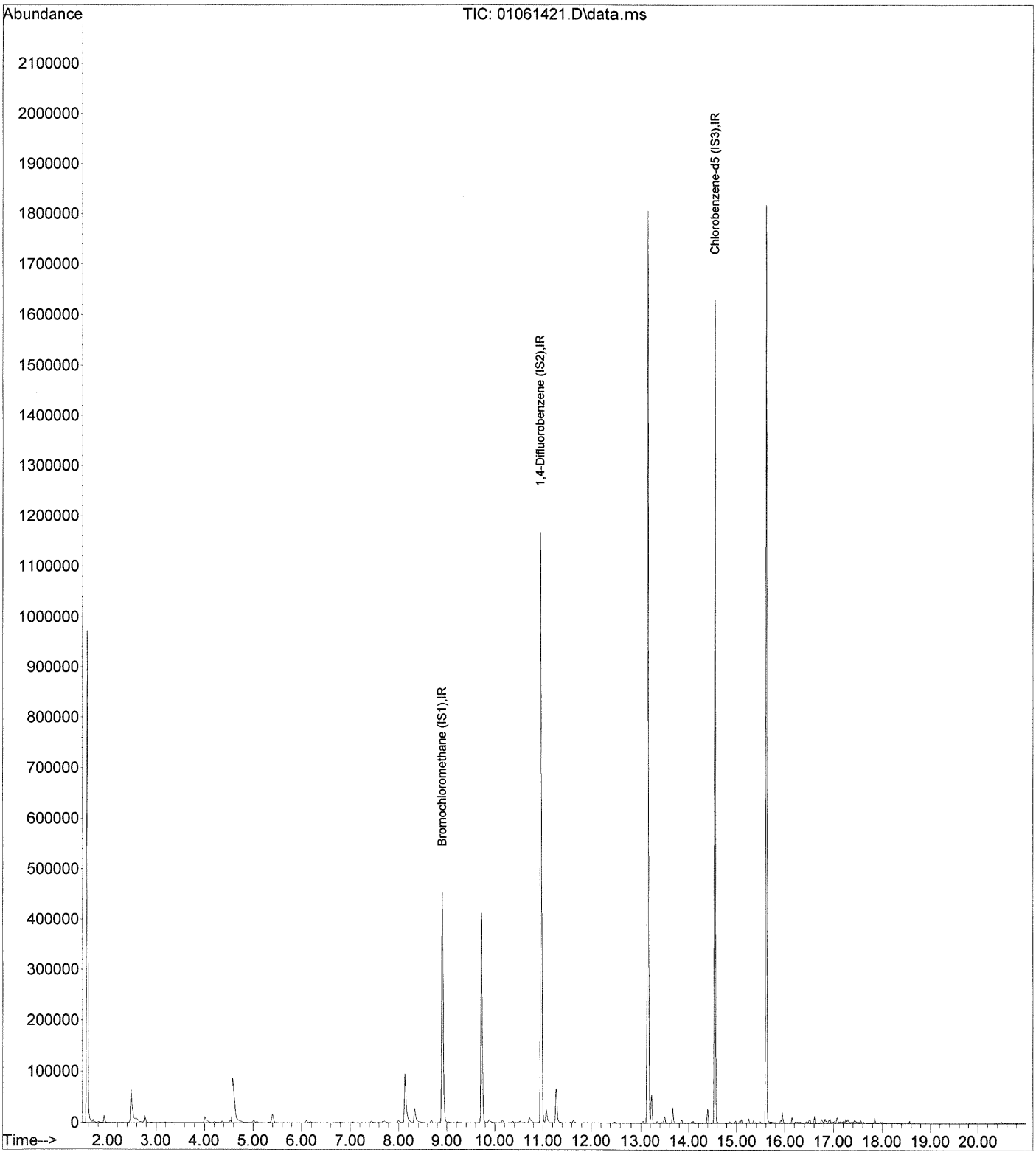
1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 08 14:42:17 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061421.D
Acq On : 6 Jan 2014 18:05 Operator: WA
Sample : P1305675-002 (1000mL)
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 08 14:42:17 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	191912	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	984432	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	420712	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	1.78	83	113	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.54	57	1430	N.D.	
11) Methyl Acetate	6.27	43	249	N.D.	
12) 2-Methylpentane	7.99	71	55	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.62	84	303	N.D.	
17) 2,3-Dimethylpentane	11.10	56	52	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	12.47	55	360	N.D.	
21) 1,3-Dichloropropane	13.28	76	52	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.77	91	127	N.D.	
24) 1,2,3-Trichloropropane	15.39	75	55	N.D.	
25) Bromobenzene	15.75	77	235	N.D.	
26) 2-Chlorotoluene	16.03	91	248	N.D.	
27) 4-Chlorotoluene	16.07	91	961	N.D.	
28) Indan	16.96	117	582	N.D.	
29) Indene	17.03	115	575	N.D.	
30) 1,2,4,5-Tetramethylben...	17.73	119	1917	N.D.	
31) 1,2,3,4-Tetramethylben...	17.73	119	1917	N.D.	
32) 1,2,3,5-Tetramethylben...	18.00	119	165	N.D.	
33) 1,2,3-Trichlorobenzene	18.57	180	1758	N.D.	

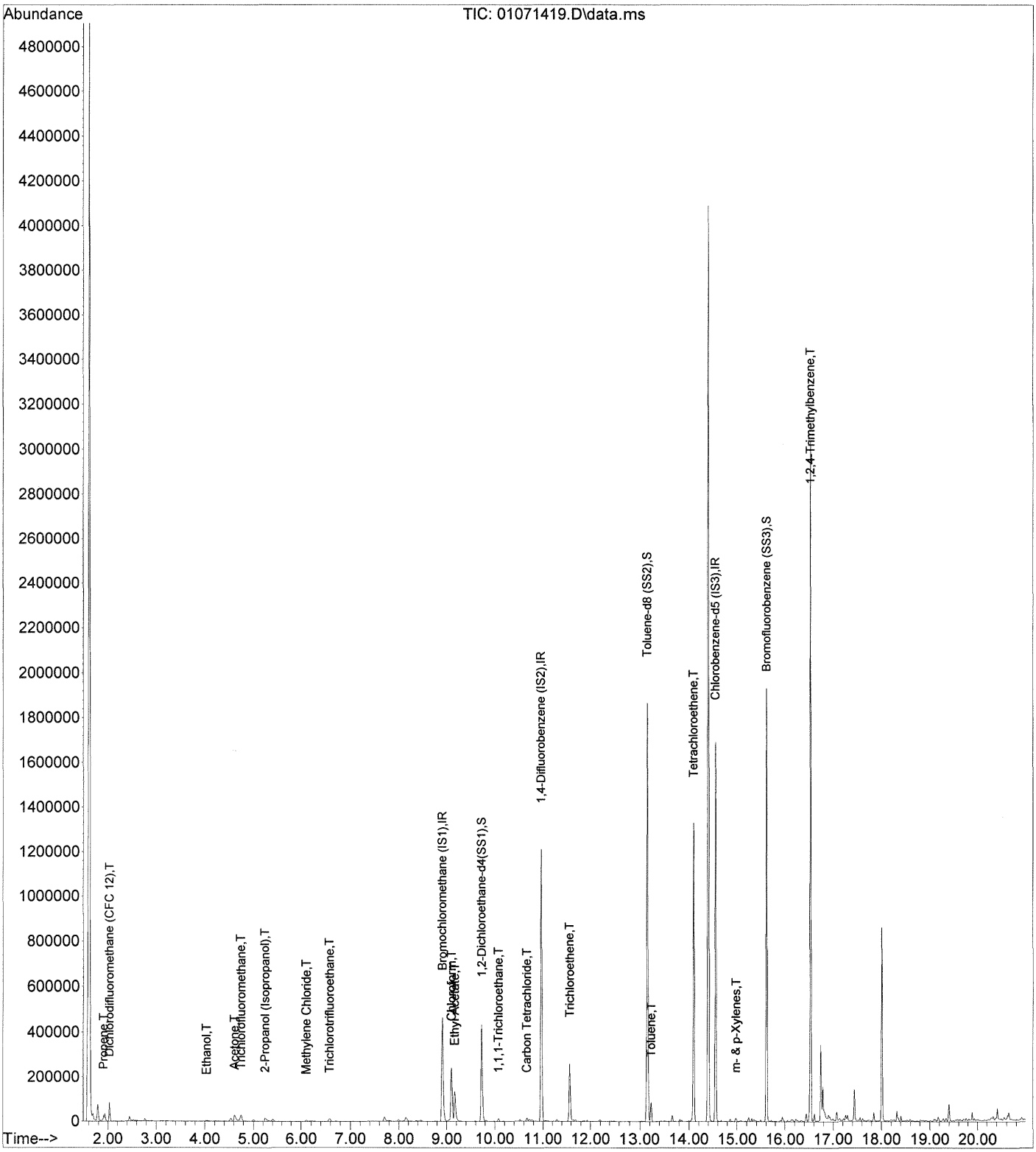
(#) = qualifier out of range (m) = manual integration (+) = signals summed

DA 1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\07\01071419.D
Acq On : 7 Jan 2014 11:32 Operator: WA
Sample : P1305675-003 (1000mL)
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 08 14:23:44 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\07\01071419.D
Acq On : 7 Jan 2014 11:32 Operator: WA
Sample : P1305675-003 (1000mL)
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 08 14:23:44 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	200225	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	1026755	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	442378	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	313279	14.395 ng	0.00
Spiked Amount 12.500			Recovery	= 115.12%	
57) Toluene-d8 (SS2)	13.14	98	1097772	11.649 ng	0.00
Spiked Amount 12.500			Recovery	= 93.20%	
73) Bromofluorobenzene (SS3)	15.61	174	478706	12.657 ng	0.00
Spiked Amount 12.500			Recovery	= 101.28%	

Target Compounds						Qvalue
2) Propene	1.91	42	7288	0.258 ng		92
3) Dichlorodifluoromethan...	2.03	85	65188	1.365 ng		99
4) Chloromethane	2.28	50	321	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	1832	N.D.		
6) Vinyl Chloride	2.62	62	433	N.D.		
7) 1,3-Butadiene	2.84	54	529	N.D.		
8) Bromomethane	3.21	94	1425	N.D.		
9) Chloroethane	3.52	64	232	N.D.		
10) Ethanol	4.04	45	5989	0.308 ng		80
11) Acetonitrile	4.23	41	3826	N.D.		
12) Acrolein	4.40	56	1047	N.D.		
13) Acetone	4.62	58	16272	0.835 ng	#	77
14) Trichlorofluoromethane	4.75	101	31799	0.719 ng		96
15) 2-Propanol (Isopropanol)	5.24	45	33491	0.473 ng		95
16) Acrylonitrile	5.44	53	591	N.D.		
17) 1,1-Dichloroethene	5.78	96	219	N.D.		
18) 2-Methyl-2-Propanol (t...	6.34	59	600	N.D.		
19) Methylene Chloride	6.10	84	3427	0.130 ng		83
20) 3-Chloro-1-propene (Al...	6.28	41	480	N.D.		
21) Trichlorotrifluoroethane	6.58	151	6713	0.288 ng		94
22) Carbon Disulfide	6.21	76	5908	N.D.		
23) trans-1,2-Dichloroethene	7.46	61	205	N.D.		
24) 1,1-Dichloroethane	7.72	63	940	N.D.		
25) Methyl tert-Butyl Ether	7.97	73	577	N.D.		
26) Vinyl Acetate	8.10	86	591	N.D.		
27) 2-Butanone (MEK)	8.37	72	1237	N.D.		
28) cis-1,2-Dichloroethene	8.76	61	675	N.D.		
29) Diisopropyl Ether	9.16	87	958	N.D.		
30) Ethyl Acetate	9.17	61	25257	2.736 ng		99
31) n-Hexane	9.05	57	3224	N.D.		
32) Chloroform	9.10	83	196424	4.625 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	9.74	87	181	N.D.		
36) 1,2-Dichloroethane	9.85	62	575	N.D.		
38) 1,1,1-Trichloroethane	10.08	97	8958	0.227 ng		95
39) Isopropyl Acetate	10.66	61	281	N.D.		
40) 1-Butanol	0.00	56	0	N.D. d		
41) Benzene	10.52	78	7474	N.D.		
42) Carbon Tetrachloride	10.66	117	7299	0.217 ng		97
43) Cyclohexane	10.77	84	2502	N.D.		
44) tert-Amyl Methyl Ether	11.23	73	844	N.D.		
45) 1,2-Dichloropropane	11.33	63	441	N.D.		

DA 1/8/14

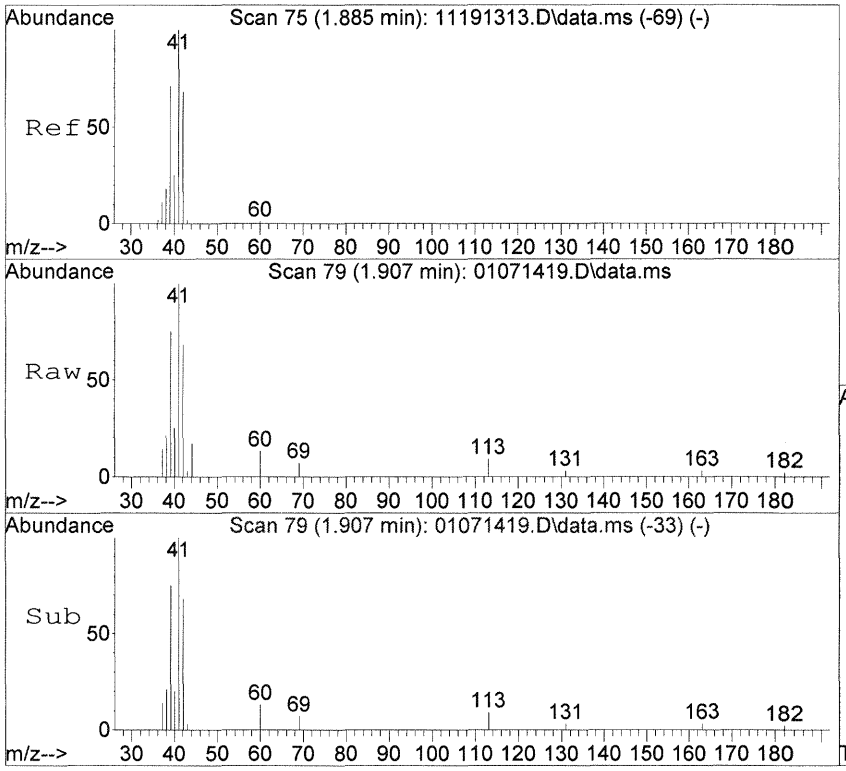
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\07\01071419.D
Acq On : 7 Jan 2014 11:32 Operator: WA
Sample : P1305675-003 (1000mL)
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 08 14:23:44 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.54	83	1394	N.D.	
47) Trichloroethene	11.57	130	92406	2.904 ng	100
48) 1,4-Dioxane	11.66	88	780	N.D.	
49) 2,2,4-Trimethylpentane...	11.64	57	3742	N.D.	
50) Methyl Methacrylate	11.88	100	238	N.D.	
51) n-Heptane	11.93	71	1126	N.D.	
52) cis-1,3-Dichloropropene	12.41	75	502	N.D.	
53) 4-Methyl-2-pentanone	12.49	58	530	N.D.	
54) trans-1,3-Dichloropropene	12.90	75	277	N.D.	
55) 1,1,2-Trichloroethane	13.01	97	351	N.D.	
58) Toluene	13.23	91	57378	0.467 ng	97
59) 2-Hexanone	13.50	43	2471	N.D.	
60) Dibromochloromethane	13.54	129	453	N.D.	
61) 1,2-Dibromoethane	13.73	107	280	N.D.	
62) n-Butyl Acetate	13.99	43	3062	N.D.	
63) n-Octane	14.05	57	1004	N.D.	
64) Tetrachloroethene	14.09	166	357693	8.958 ng	99
65) Chlorobenzene	14.58	112	1719	N.D.	
66) Ethylbenzene	14.86	91	5004	N.D.	
67) m- & p-Xylenes	14.98	91	10357	0.096 ng	94
68) Bromoform	15.01	173	1214	N.D.	
69) Styrene	15.23	104	2390	N.D.	
70) o-Xylene	15.30	91	4270	N.D.	
71) n-Nonane	15.48	43	2535	N.D.	
72) 1,1,2,2-Tetrachloroethane	15.30	83	779	N.D.	
74) Cumene	15.71	105	2866	N.D.	
75) alpha-Pinene	15.97	93	1807	N.D.	
76) n-Propylbenzene	16.06	91	3585	N.D.	
77) 3-Ethyltoluene	16.14	105	3460	N.D.	
78) 4-Ethyltoluene	16.17	105	3073	N.D.	
79) 1,3,5-Trimethylbenzene	16.22	105	2547	N.D.	
80) alpha-Methylstyrene	16.33	118	1127	N.D.	
81) 2-Ethyltoluene	16.36	105	2974	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	16556	0.140 ng	88
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	16.60	91	852	N.D.	
85) 1,3-Dichlorobenzene	16.61	146	1391	N.D.	
86) 1,4-Dichlorobenzene	16.66	146	1670	N.D.	
87) sec-Butylbenzene	16.71	105	2980	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	3712	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	2712	N.D.	
90) 1,2-Dichlorobenzene	16.91	146	1373	N.D.	
91) d-Limonene	16.93	68	2528	N.D.	
92) 1,2-Dibromo-3-Chloropr...	17.24	157	449	N.D.	
93) n-Undecane	17.56	57	3576	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	1320	N.D.	
95) Naphthalene	18.35	128	8514	N.D.	
96) n-Dodecane	18.41	57	5539	N.D.	
97) Hexachlorobutadiene	18.65	225	626	N.D.	
98) Cyclohexanone	15.08	55	1734	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	17.15	91	3373	N.D.	

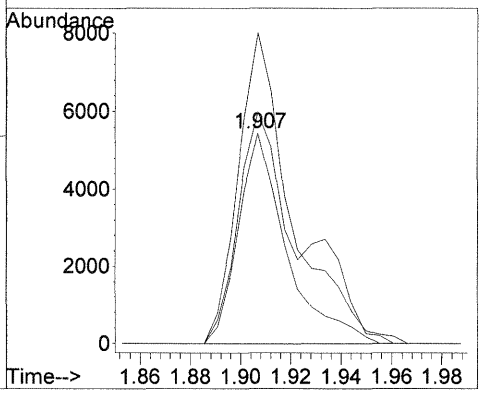
(#) = qualifier out of range (m) = manual integration (+) = signals summed

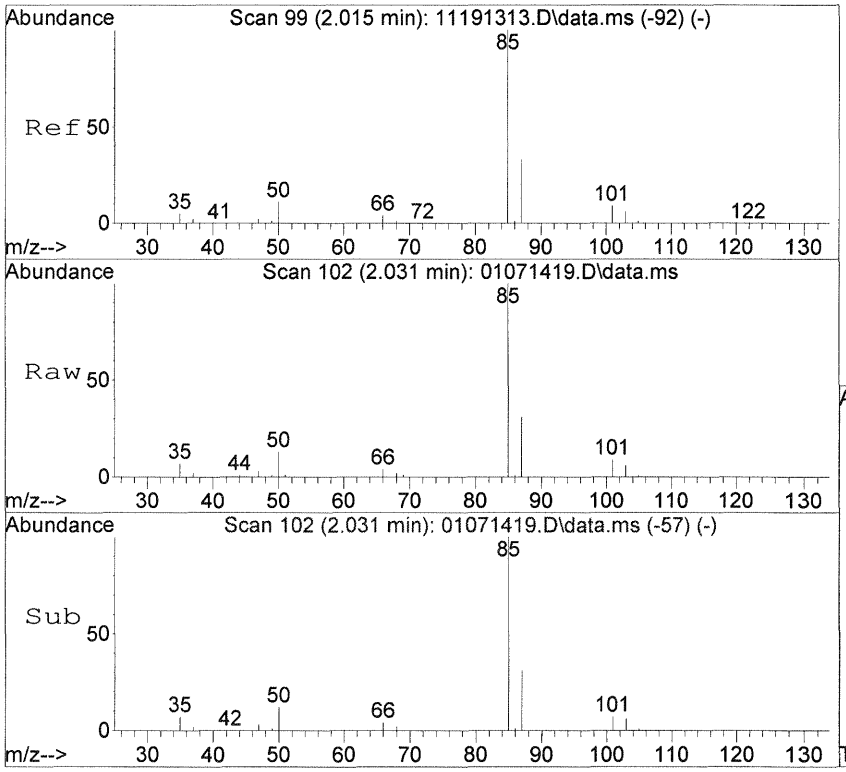


#2
Propene
Concen: 0.26 ng
RT: 1.91 min Scan# 79
Delta R.T. -0.000 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 42 Resp: 7288

Ion	Ratio	Lower	Upper
42	100		
39	103.2	85.9	125.9
41	163.8	129.1	169.1

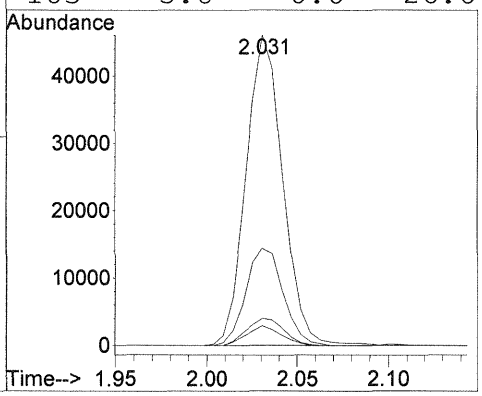


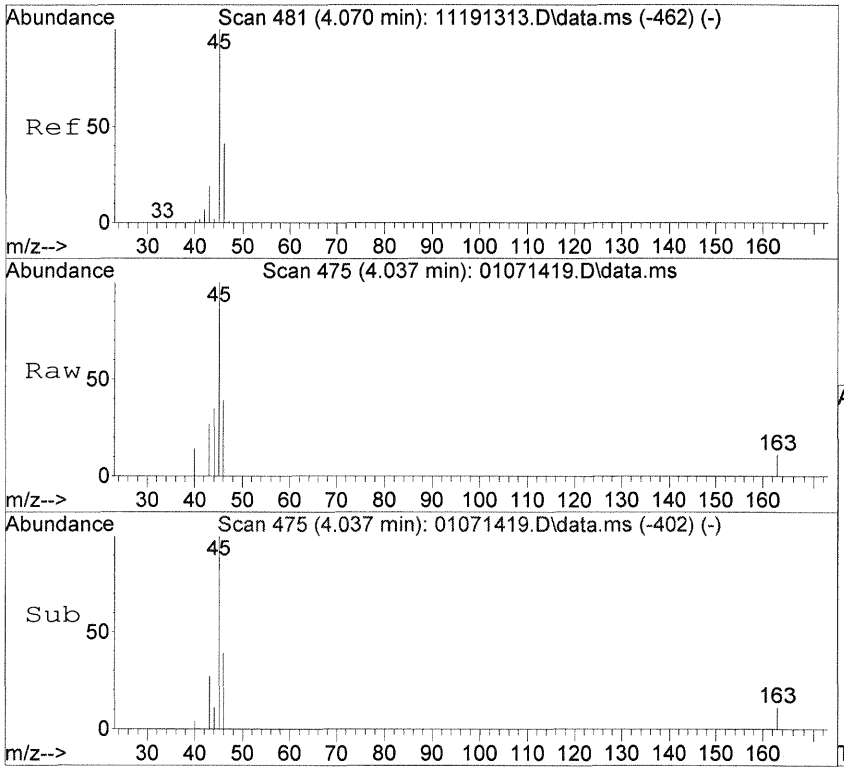


#3
Dichlorodifluoromethane (CFC 1:
Concen: 1.36 ng
RT: 2.03 min Scan# 102
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 85 Resp: 65188

Ion	Ratio	Lower	Upper
85	100		
87	31.7	12.7	52.7
101	8.7	0.0	29.1
103	5.8	0.0	26.0

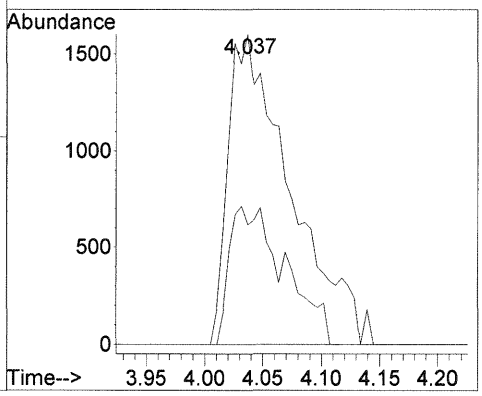


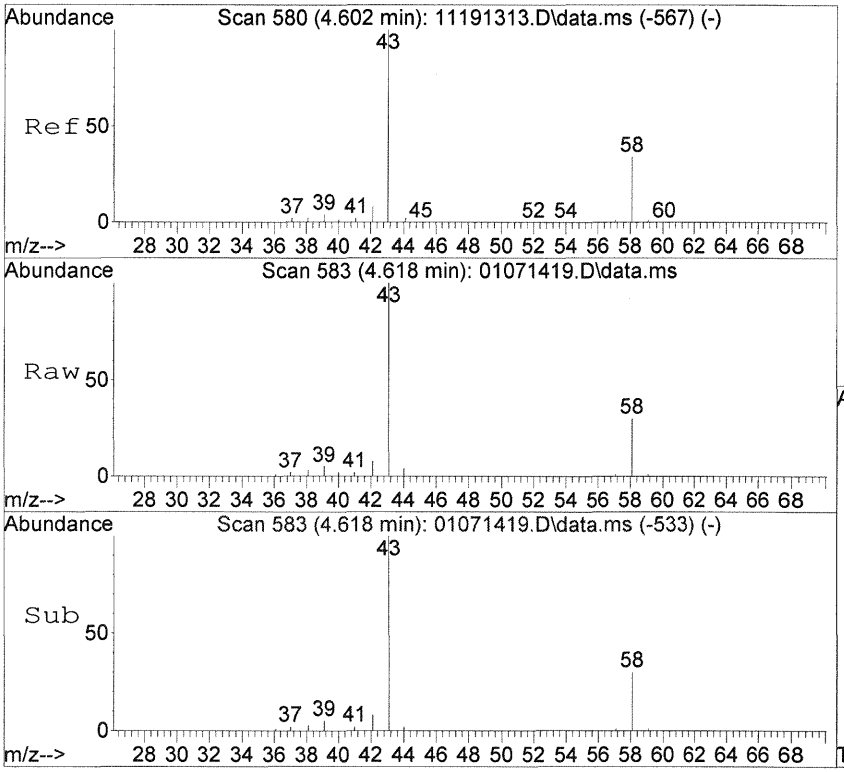


#10
Ethanol
Concen: 0.31 ng
RT: 4.04 min Scan# 475
Delta R.T. 0.043 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 45 Resp: 5989

Ion	Ratio	Lower	Upper
45	100		
46	28.6	21.0	61.0

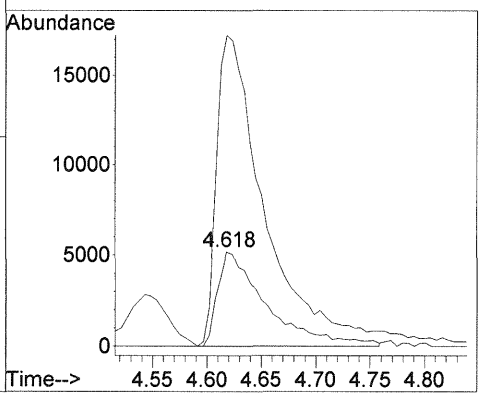


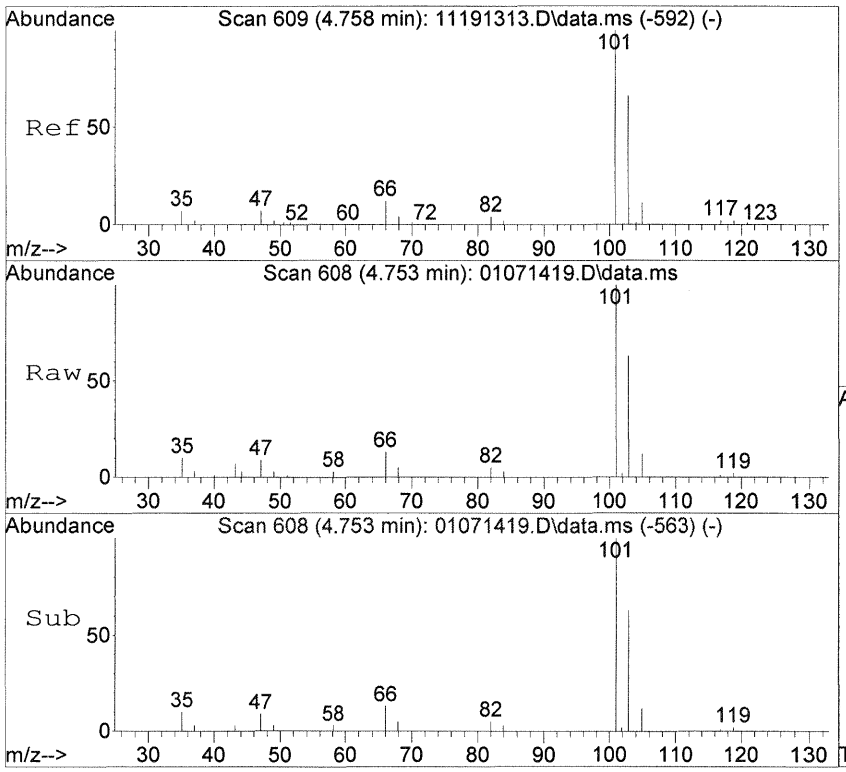


#13
Acetone
Concen: 0.84 ng
RT: 4.62 min Scan# 583
Delta R.T. 0.021 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 58 Resp: 16272

Ion	Ratio	Lower	Upper
58	100		
43	339.7	265.2	325.2#

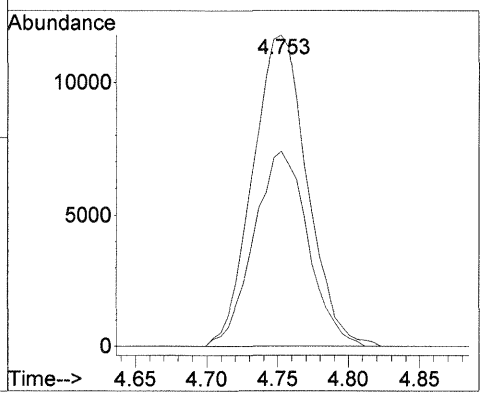


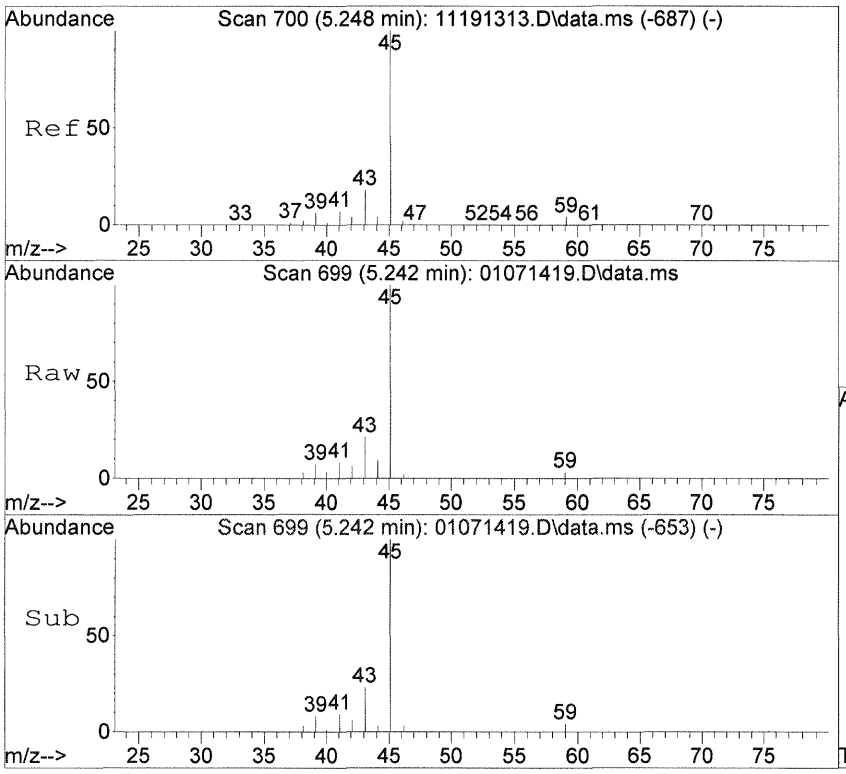


#14
Trichlorofluoromethane
Concen: 0.72 ng
RT: 4.75 min Scan# 608
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:101 Resp: 31799

Ion	Ratio	Lower	Upper
101	100		
103	62.5	45.3	85.3

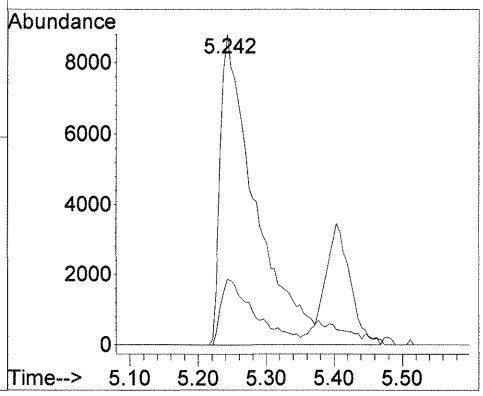


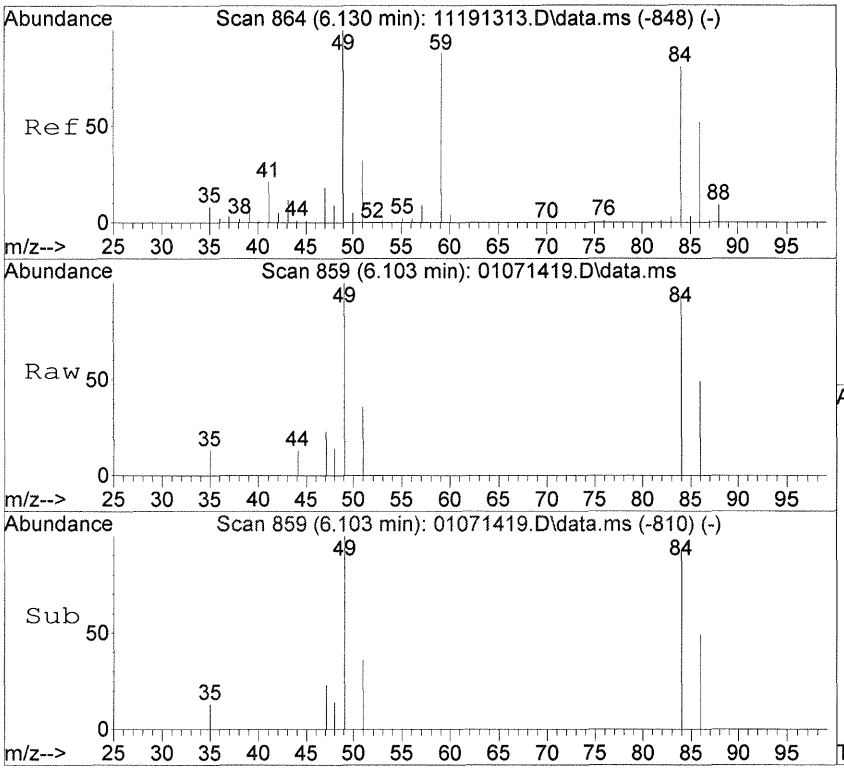


#15
2-Propanol (Isopropanol)
Concen: 0.47 ng
RT: 5.24 min Scan# 699
Delta R.T. 0.000 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 45 Resp: 33491

Ion	Ratio	Lower	Upper
45	100		
43	19.6	0.0	37.6

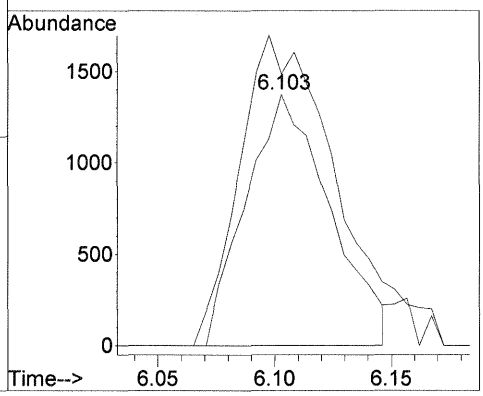


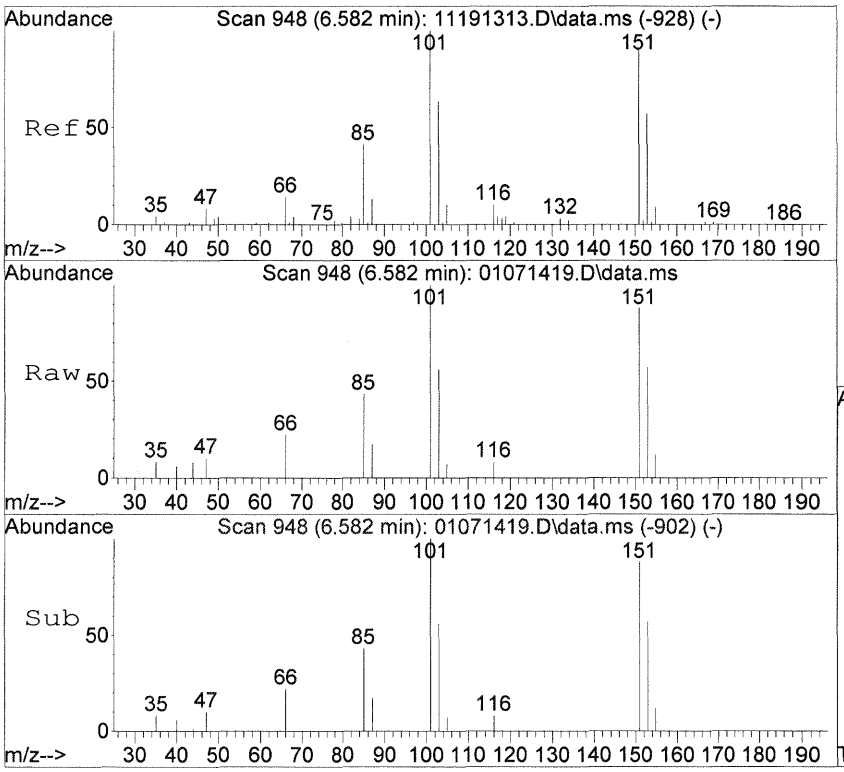


#19
Methylene Chloride
Concen: 0.13 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 84 Resp: 3427

Ion	Ratio	Lower	Upper
84	100		
49	145.6	101.0	151.0

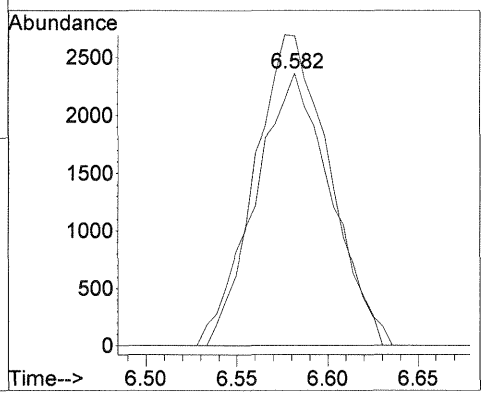


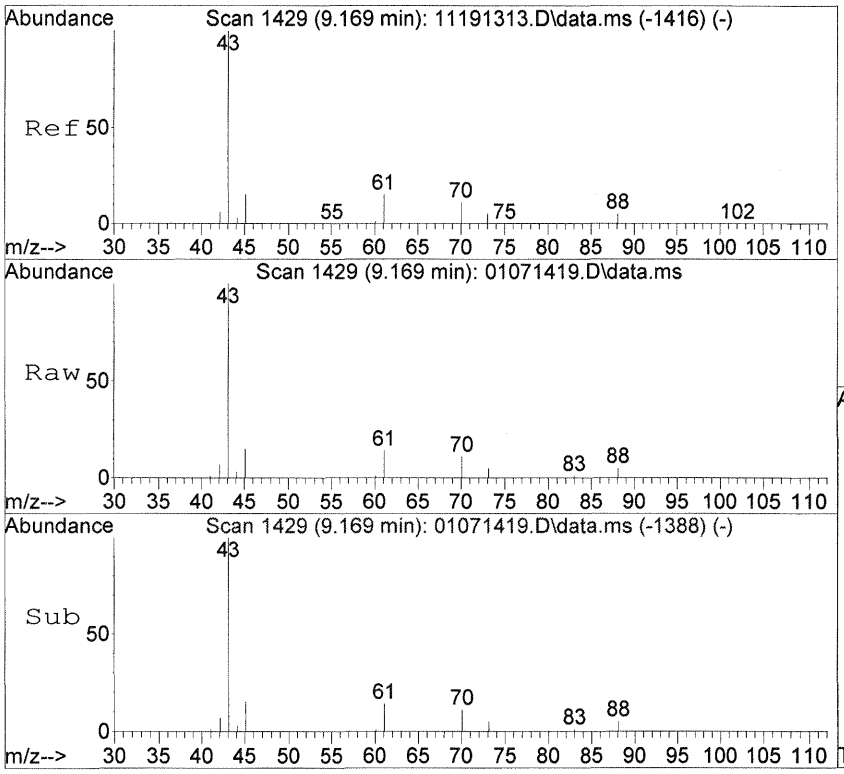


#21
Trichlorotrifluoroethane
Concen: 0.29 ng
RT: 6.58 min Scan# 948
Delta R.T. 0.000 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:151 Resp: 6713

Ion	Ratio	Lower	Upper
151	100		
101	116.4	90.2	130.2

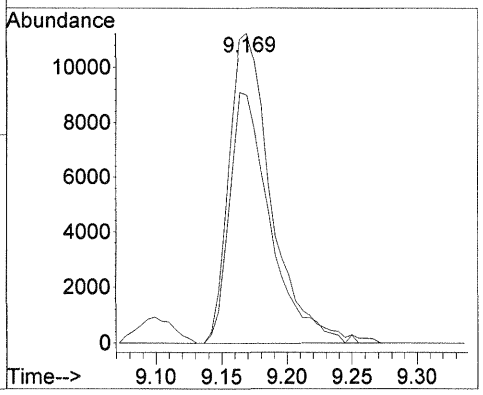


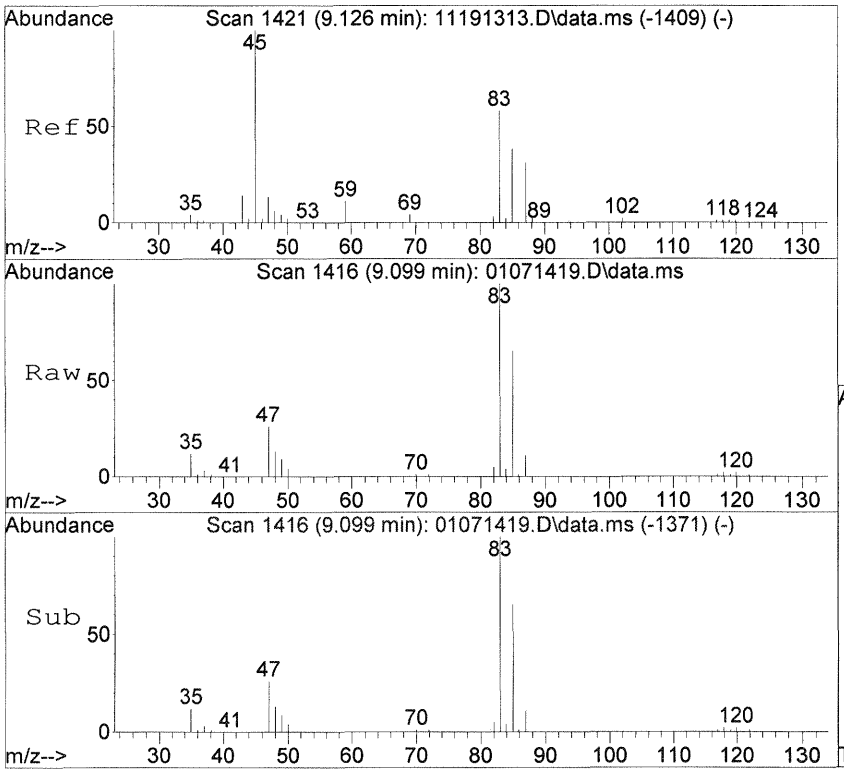


#30
Ethyl Acetate
Concen: 2.74 ng
RT: 9.17 min Scan# 1429
Delta R.T. -0.027 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 61 Resp: 25257

Ion	Ratio	Lower	Upper
61	100		
70	77.4	58.6	98.6

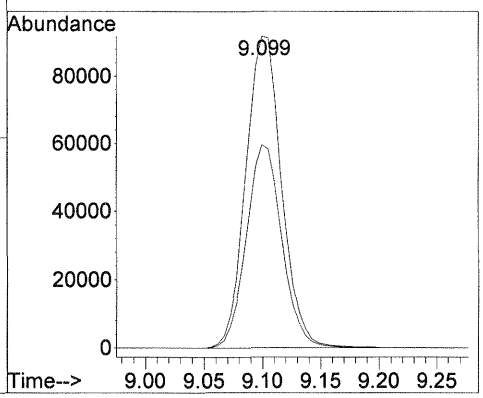


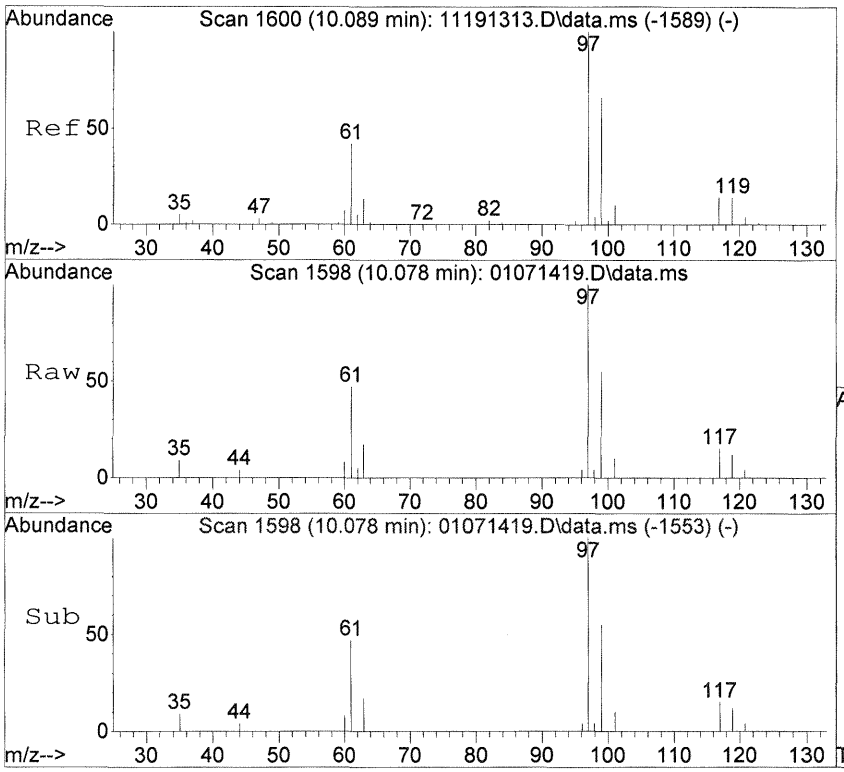


#32
Chloroform
Concen: 4.62 ng
RT: 9.10 min Scan# 1416
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 83 Resp: 196424

Ion	Ratio	Lower	Upper
83	100		
85	64.4	45.2	85.2

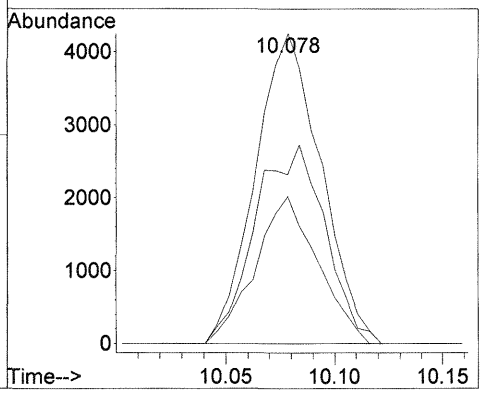


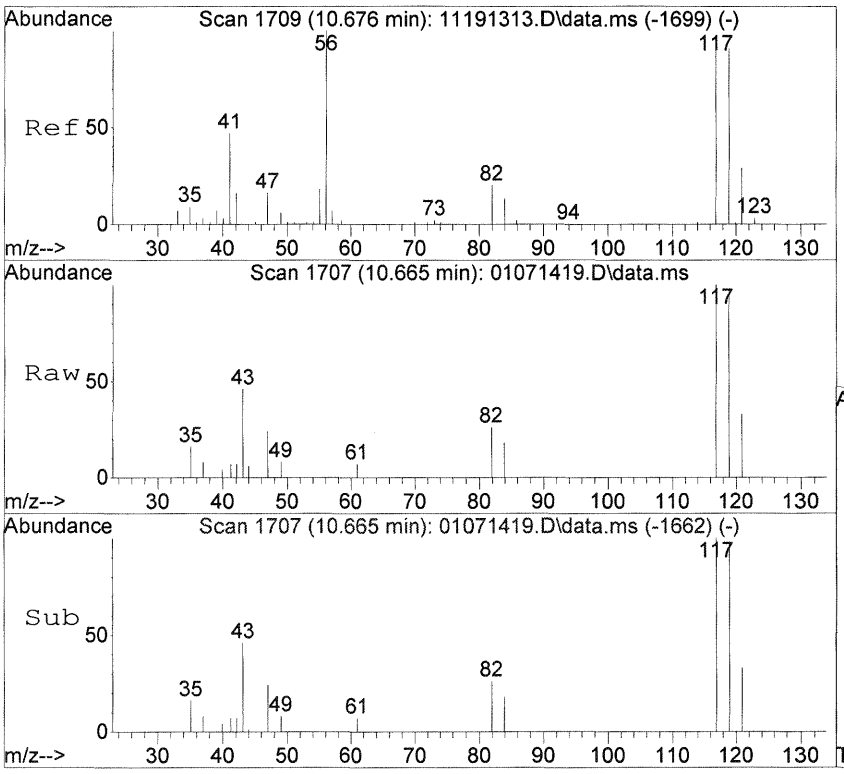


#38
1,1,1-Trichloroethane
Concen: 0.23 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 97 Resp: 8958

Ion	Ratio	Lower	Upper
97	100		
99	68.2	44.8	84.8
61	45.2	20.9	60.9

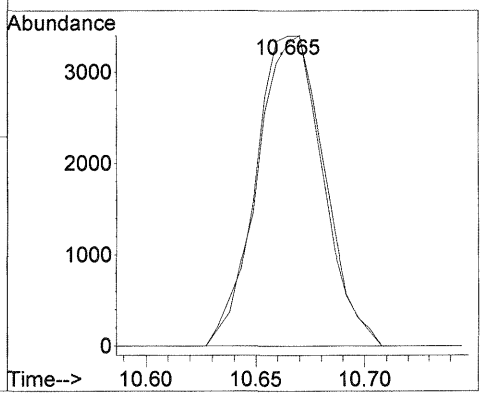


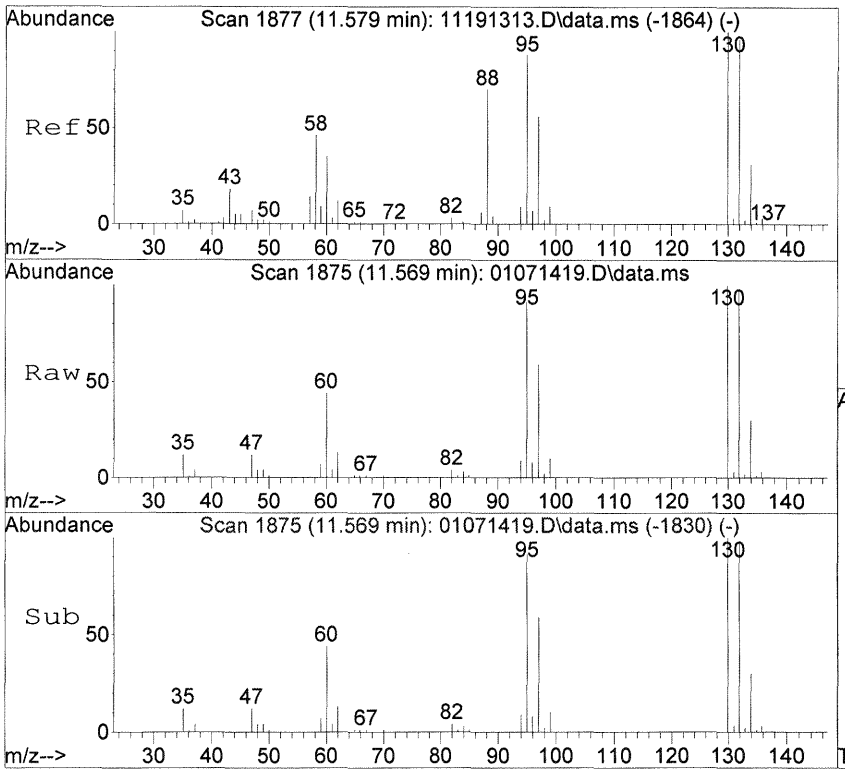


#42
Carbon Tetrachloride
Concen: 0.22 ng
RT: 10.66 min Scan# 1707
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:117 Resp: 7299

Ion	Ratio	Lower	Upper
117	100		
119	99.4	76.1	116.1

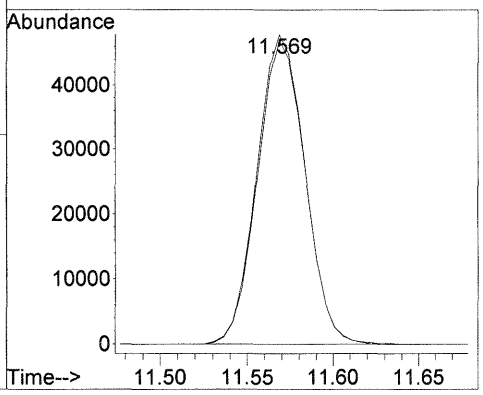


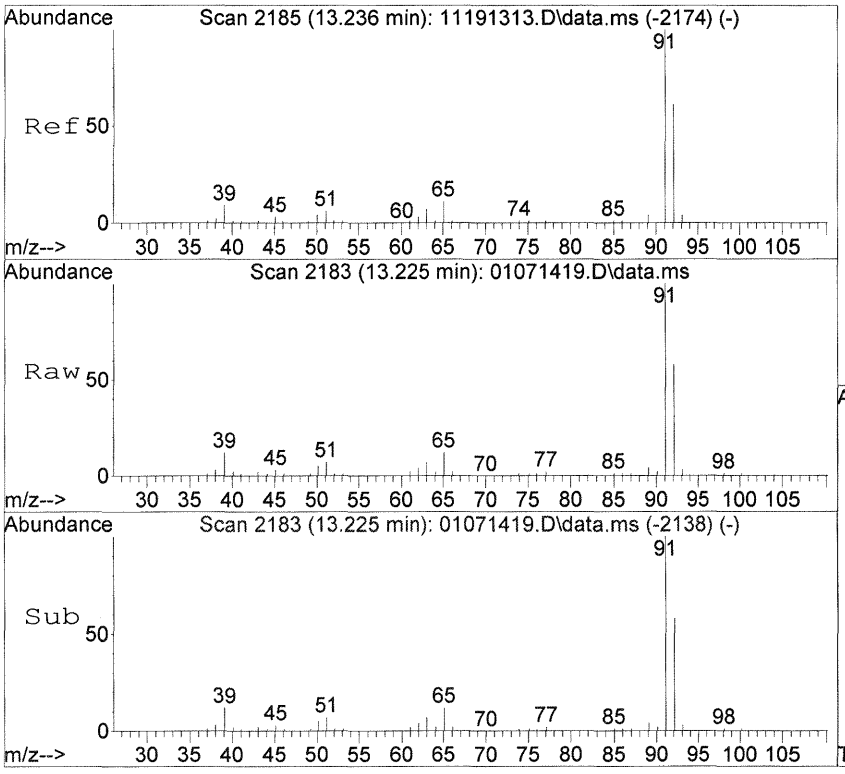


#47
Trichloroethene
Concen: 2.90 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:130 Resp: 92406

Ion	Ratio	Lower	Upper
130	100		
132	96.9	76.5	116.5

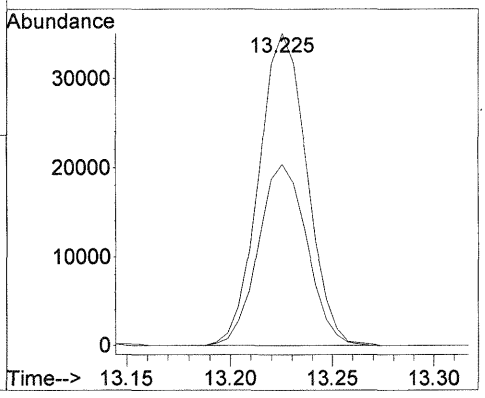


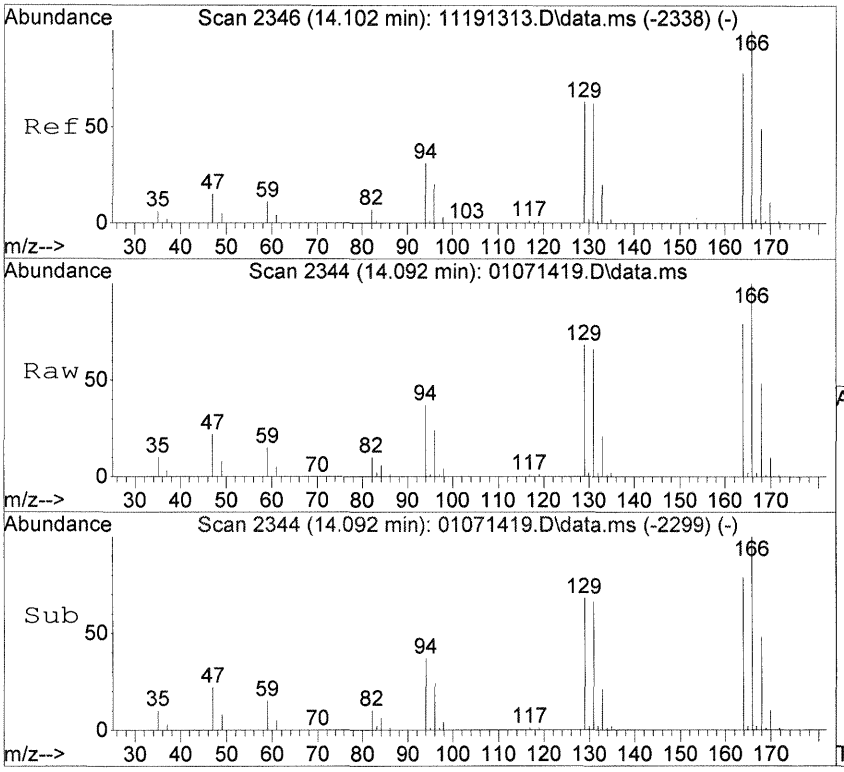


#58
Toluene
Concen: 0.47 ng
RT: 13.23 min Scan# 2183
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 91 Resp: 57378

Ion	Ratio	Lower	Upper
91	100		
92	58.7	40.8	80.8

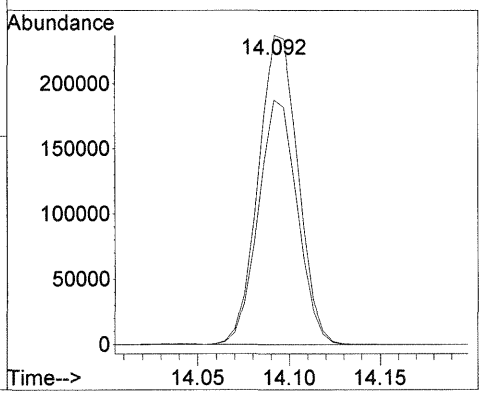


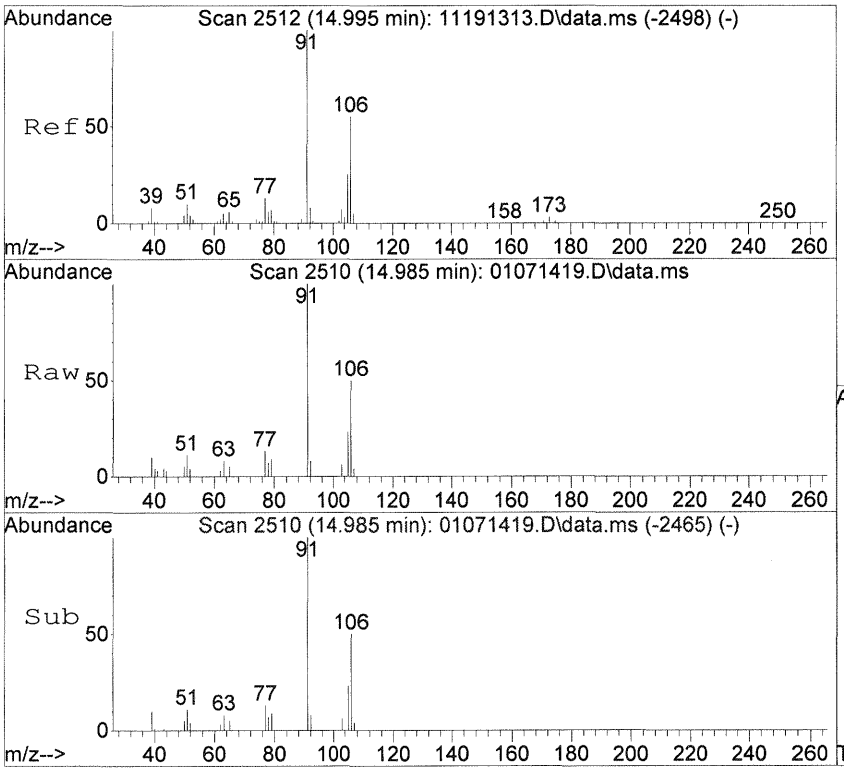


#64
Tetrachloroethene
Concen: 8.96 ng
RT: 14.09 min Scan# 2344
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:166 Resp: 357693

Ion	Ratio	Lower	Upper
166	100		
164	77.8	58.5	98.5

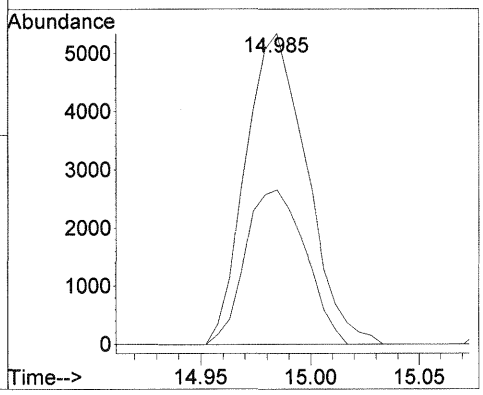


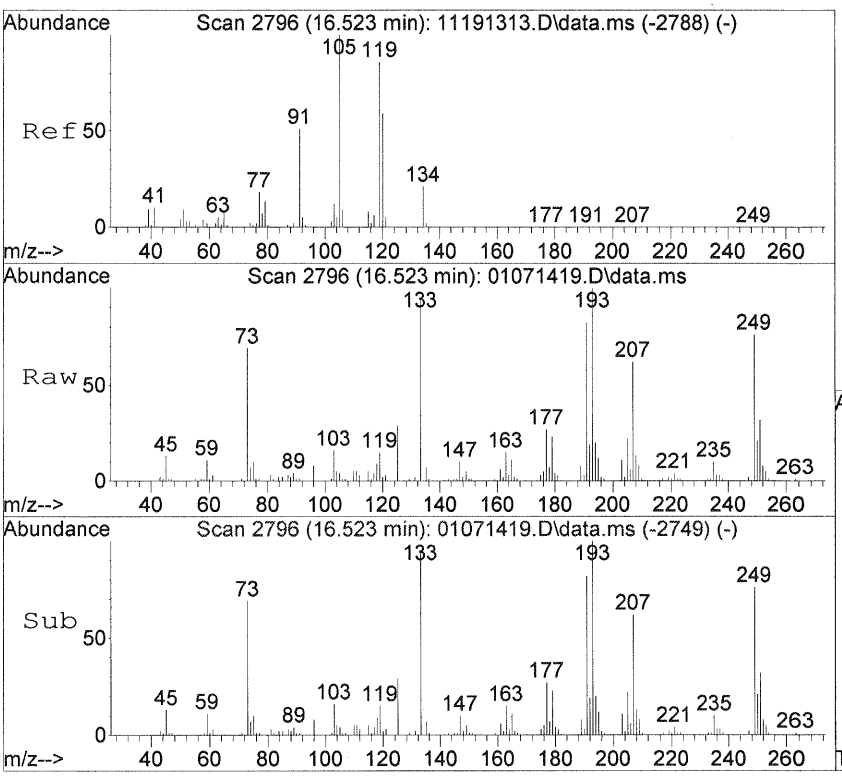


#67
m- & p-Xylenes
Concen: 0.10 ng
RT: 14.98 min Scan# 2510
Delta R.T. -0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion: 91 Resp: 10357

Ion	Ratio	Lower	Upper
91	100		
106	48.9	33.4	73.4

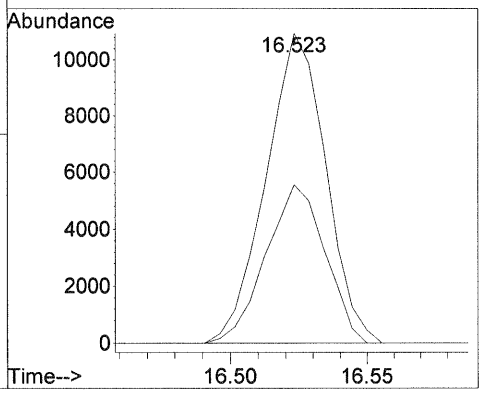




#82
1,2,4-Trimethylbenzene
Concen: 0.14 ng
RT: 16.52 min Scan# 2796
Delta R.T. 0.005 min
Lab File: 01071419.D
Acq: 7 Jan 2014 11:32

Tgt Ion:105 Resp: 16556

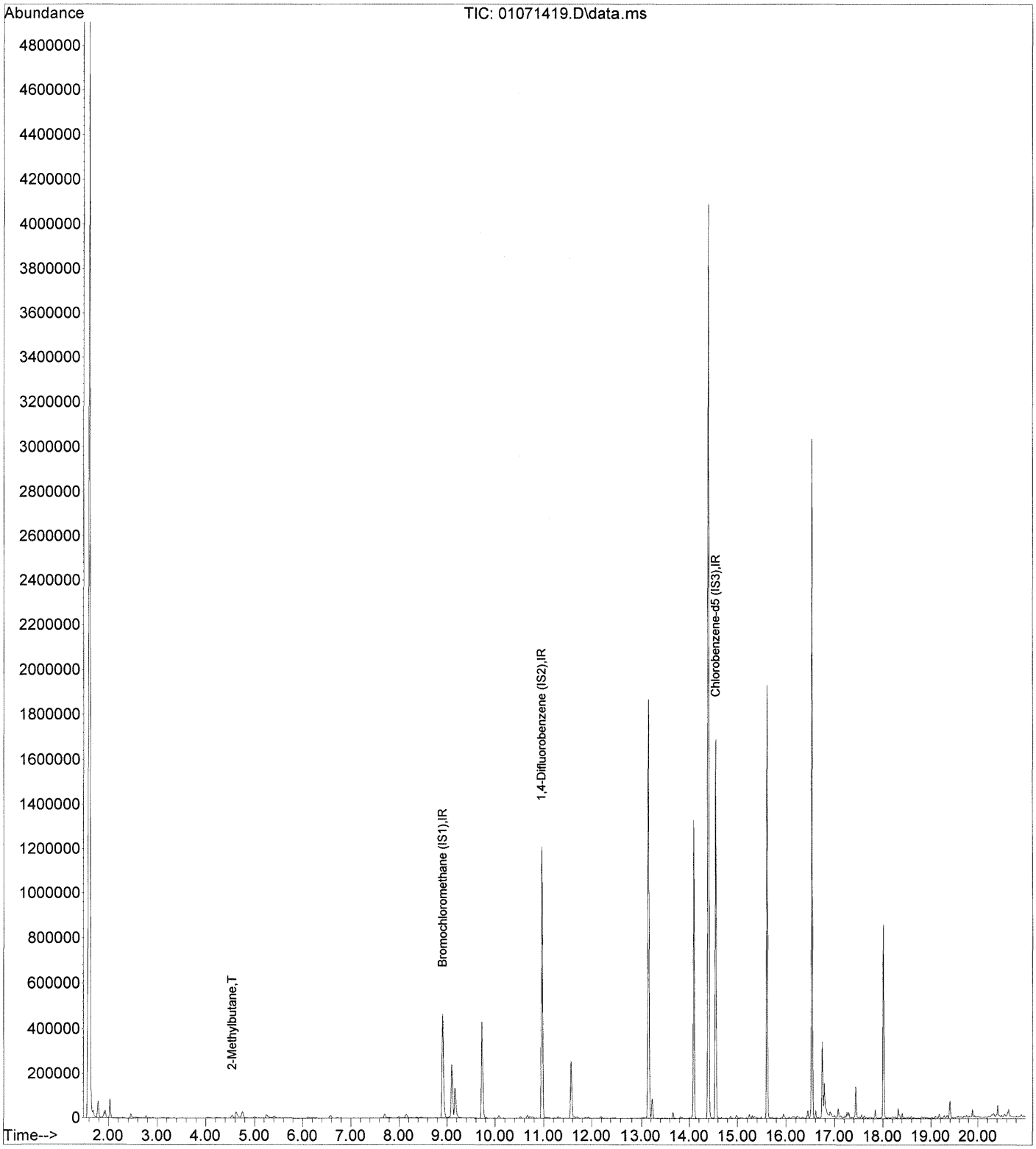
Ion	Ratio	Lower	Upper
105	100		
120	50.5	39.3	79.3



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\07\01071419.D
Acq On : 7 Jan 2014 11:32 Operator: WA
Sample : P1305675-003 (1000mL)
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 08 14:42:53 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\07\01071419.D
Acq On : 7 Jan 2014 11:32 Operator: WA
Sample : P1305675-003 (1000mL)
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 08 14:42:53 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	200364	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	1027238	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	442335	12.500 ng	0.00
Target Compounds					Qvalue
2) Chloropentafluoroethane	1.69	85	682	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D. d	
4) 1,1-Difluoroethane	1.85	65	592	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	2.28	65	2355	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.55	57	5043	0.205 ng	98
11) Methyl Acetate	6.26	43	407	N.D.	
12) 2-Methylpentane	8.00	71	2024	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.66	84	1170	N.D.	
17) 2,3-Dimethylpentane	11.11	56	709	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	12.45	55	490	N.D.	
21) 1,3-Dichloropropane	13.23	76	185	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.86	91	5004	N.D.	
24) 1,2,3-Trichloropropane	15.36	75	261	N.D.	
25) Bromobenzene	15.71	77	365	N.D.	
26) 2-Chlorotoluene	16.02	91	66	N.D.	
27) 4-Chlorotoluene	16.06	91	3585	N.D.	
28) Indan	16.96	117	101	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	17.73	119	138	N.D.	
31) 1,2,3,4-Tetramethylben...	17.76	119	321	N.D.	
32) 1,2,3,5-Tetramethylben...	18.07	119	291	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

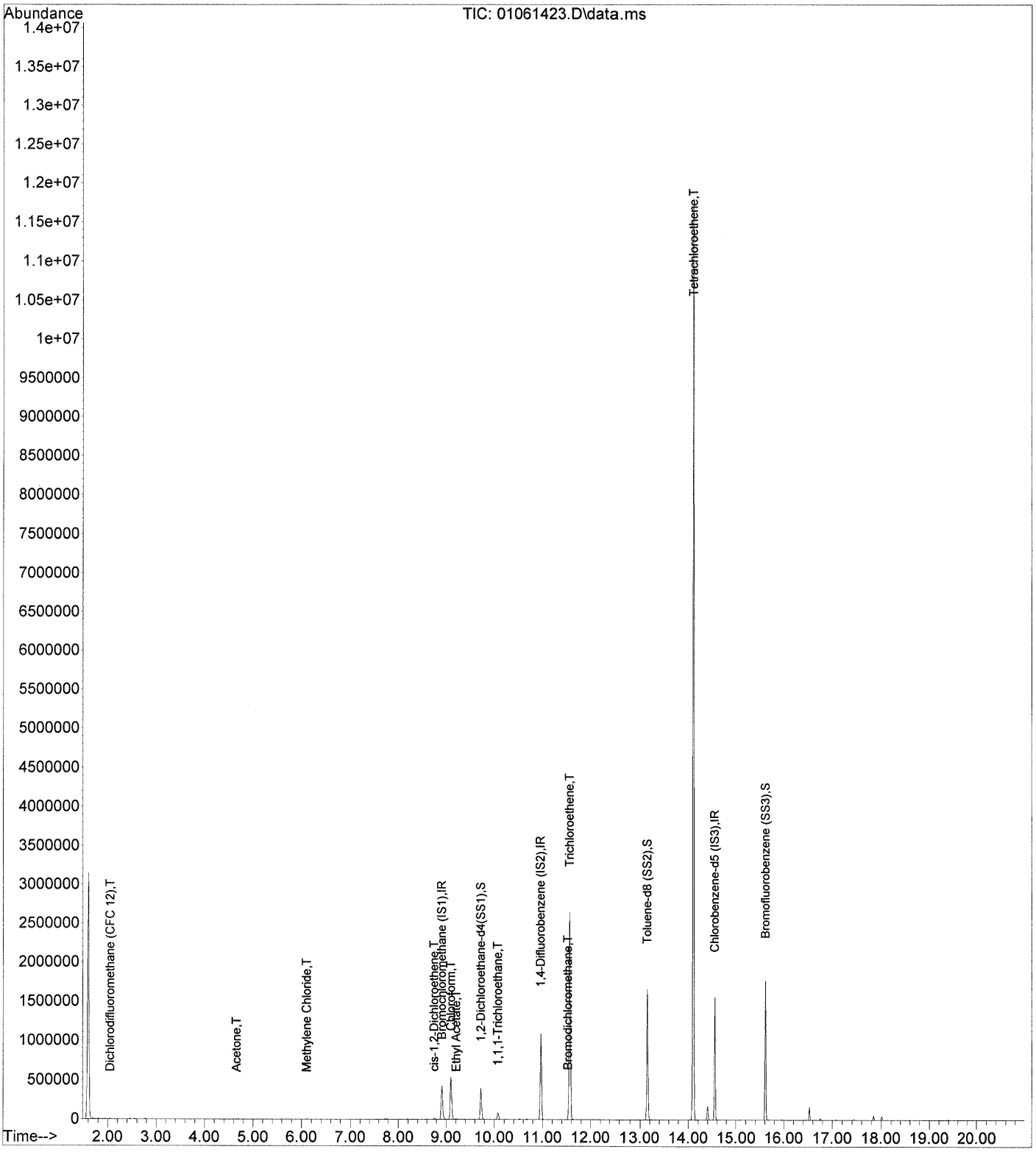
(#) = qualifier out of range (m) = manual integration (+) = signals summed

1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061423.D
Acq On : 6 Jan 2014 19:03 Operator: WA
Sample : P1305675-004 (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:17:18 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061423.D
Acq On : 6 Jan 2014 19:03 Operator: WA
Sample : P1305675-004 (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:17:18 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	178366	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	914140	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	401651	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	285737	14.738 ng	0.00
Spiked Amount 12.500			Recovery	= 117.92%	
57) Toluene-d8 (SS2)	13.14	98	987750	11.544 ng	0.00
Spiked Amount 12.500			Recovery	= 92.32%	
73) Bromofluorobenzene (SS3)	15.61	174	441847	12.867 ng	0.00
Spiked Amount 12.500			Recovery	= 102.96%	

Target Compounds						Qvalue
2) Propene	1.93	42	882	N.D.		
3) Dichlorodifluoromethan...	2.05	85	4560	0.107 ng		93
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	3.21	94	654	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D.		
11) Acetonitrile	4.25	41	182	N.D.		
12) Acrolein	4.40	56	52	N.D.		
13) Acetone	4.66	58	2638	0.152 ng	#	71
14) Trichlorofluoromethane	4.76	101	2047	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	6.10	84	2375	0.101 ng		96
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	6.59	151	124	N.D.		
22) Carbon Disulfide	6.22	76	4231	N.D.		
23) trans-1,2-Dichloroethene	7.47	61	340	N.D.		
24) 1,1-Dichloroethane	7.72	63	2582	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	8.76	61	9566	0.320 ng		98
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	9.21	61	1251	0.152 ng	#	70
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	9.10	83	427457	11.298 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	9.73	62	99	N.D.		
38) 1,1,1-Trichloroethane	10.08	97	56565	1.607 ng		97
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	10.52	78	6157	N.D.		
42) Carbon Tetrachloride	10.67	117	2561	N.D.		
43) Cyclohexane	10.66	84	281	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		

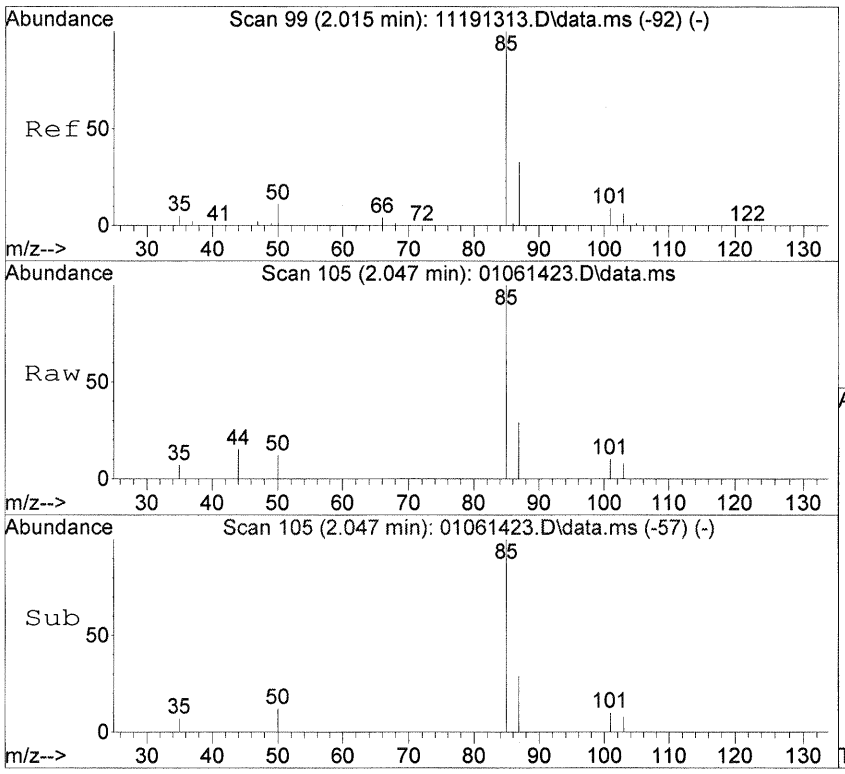
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061423.D
Acq On : 6 Jan 2014 19:03 Operator: WA
Sample : P1305675-004 (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:17:18 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	4180	0.140 ng	99
47) Trichloroethene	11.57	130	914050	32.263 ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	2961	N.D.	
59) 2-Hexanone	13.67	43	156	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.01	43	588	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.10	166	3120408	86.074 ng	99
65) Chlorobenzene	14.59	112	188	N.D.	
66) Ethylbenzene	14.86	91	431	N.D.	
67) m- & p-Xylenes	14.97	91	636	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	15.48	43	109	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.61	105	560	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	15.95	105	2477	N.D.	
78) 4-Ethyltoluene	15.95	105	2477	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	16.52	118	2133	N.D.	
81) 2-Ethyltoluene	16.52	105	811	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	811	N.D.	
83) n-Decane	16.60	57	270	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	16.52	105	811	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	108	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.44	57	1370	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	18.35	128	126	N.D.	
96) n-Dodecane	18.41	57	181	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.10	55	938	N.D.	
99) tert-Butylbenzene	16.52	119	2945	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

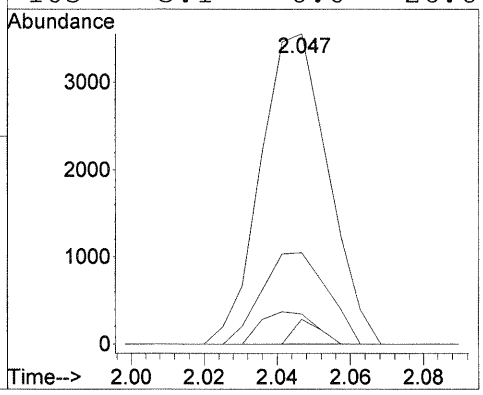
(#) = qualifier out of range (m) = manual integration (+) = signals summed

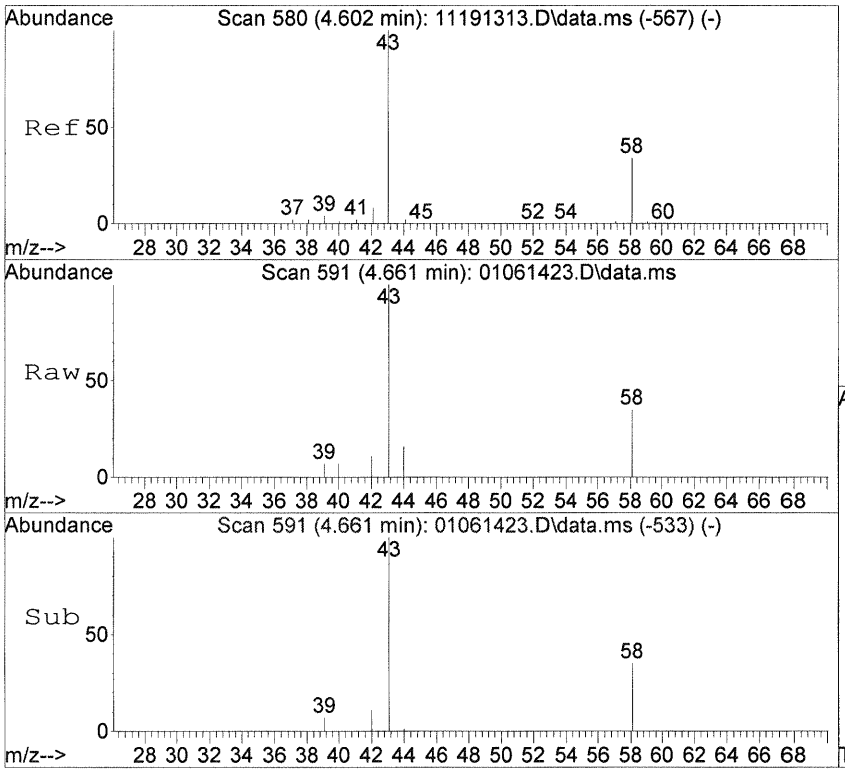


#3
Dichlorodifluoromethane (CFC 1:
Concen: 0.11 ng
RT: 2.05 min Scan# 105
Delta R.T. 0.011 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 85 Resp: 4560

Ion	Ratio	Lower	Upper
85	100		
87	28.5	12.7	52.7
101	8.2	0.0	29.1
103	3.1	0.0	26.0

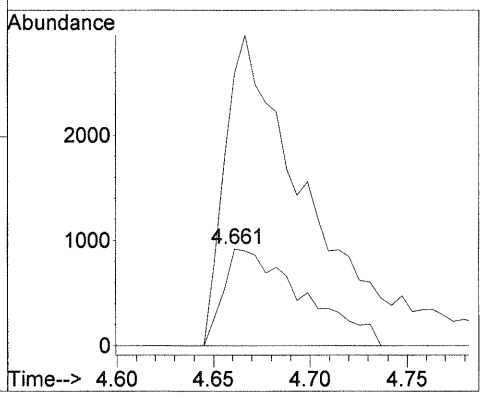


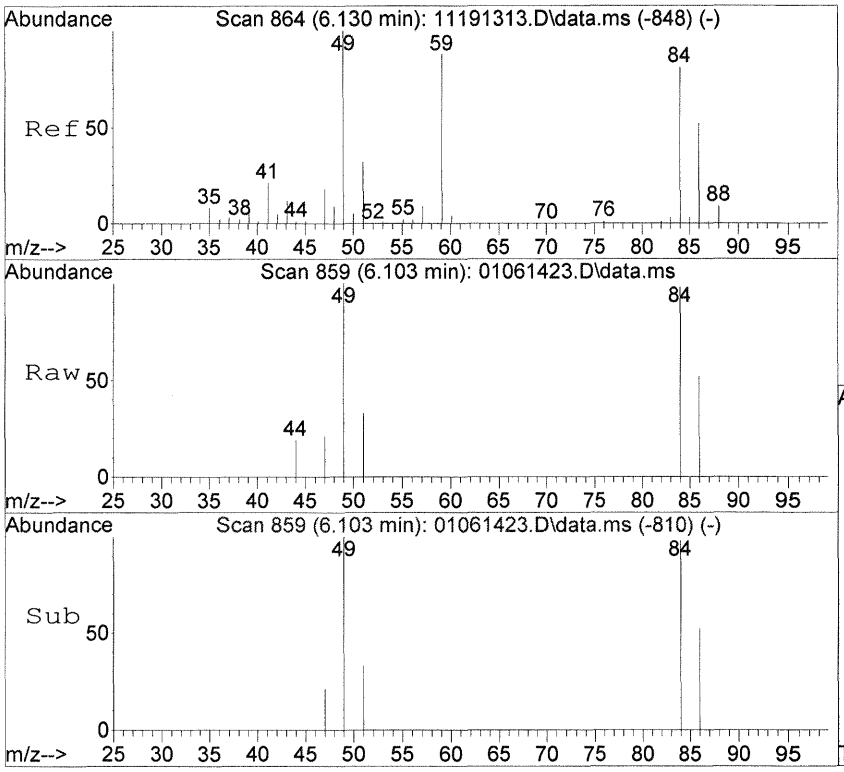


#13
Acetone
Concen: 0.15 ng
RT: 4.66 min Scan# 591
Delta R.T. 0.064 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 58 Resp: 2638

Ion	Ratio	Lower	Upper
58	100		
43	351.9	265.2	325.2#

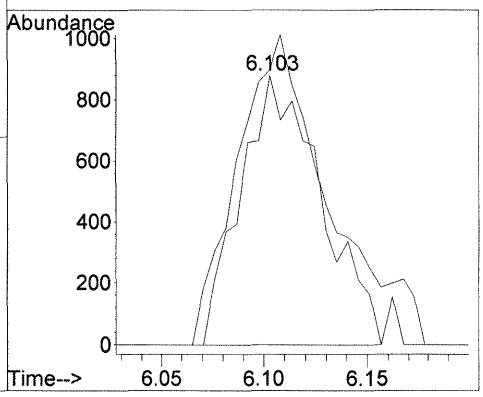


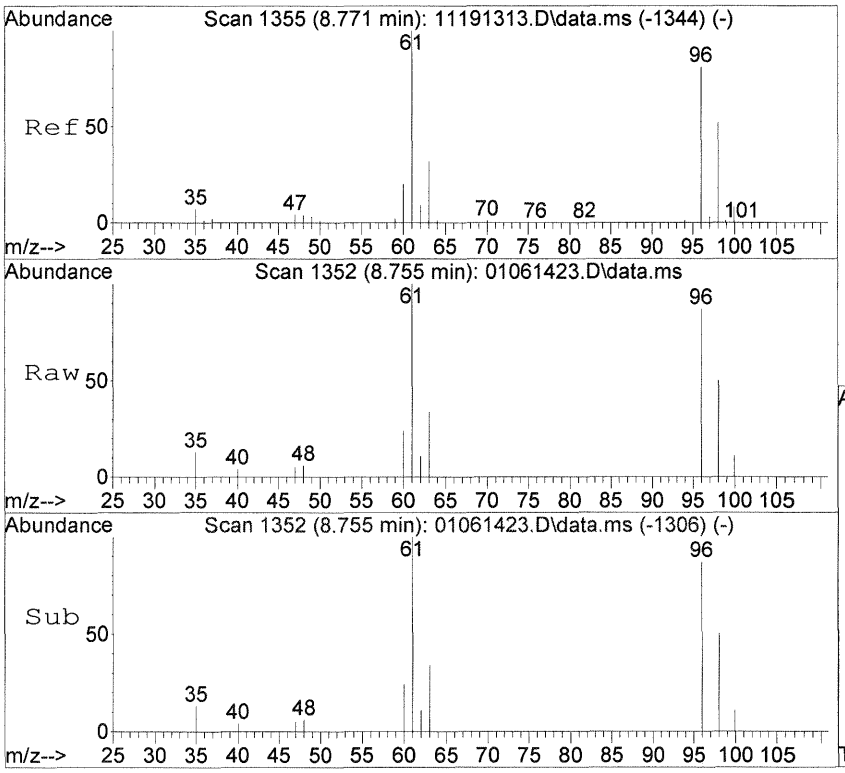


#19
Methylene Chloride
Concen: 0.10 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 84 Resp: 2375

Ion	Ratio	Lower	Upper
84	100		
49	131.0	101.0	151.0

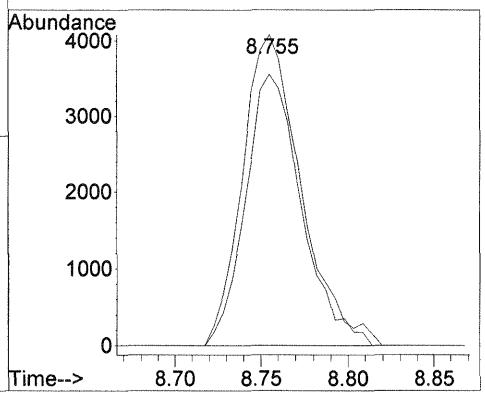


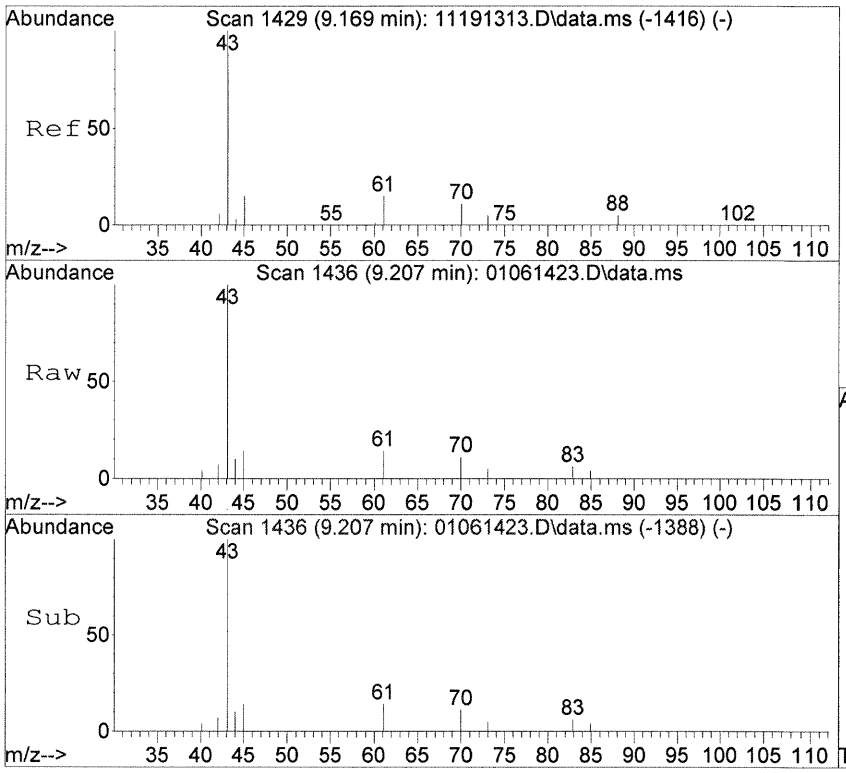


#28
cis-1,2-Dichloroethene
Concen: 0.32 ng
RT: 8.76 min Scan# 1352
Delta R.T. 0.000 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 61 Resp: 9566

Ion	Ratio	Lower	Upper
61	100		
96	83.6	61.4	101.4

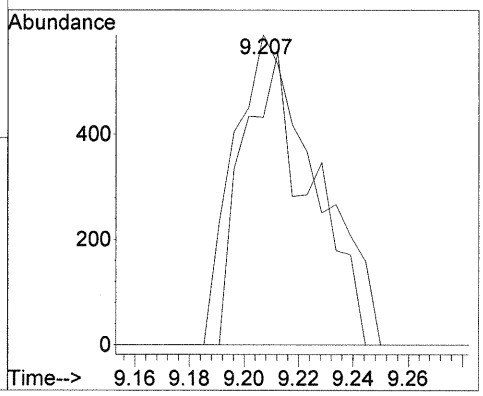


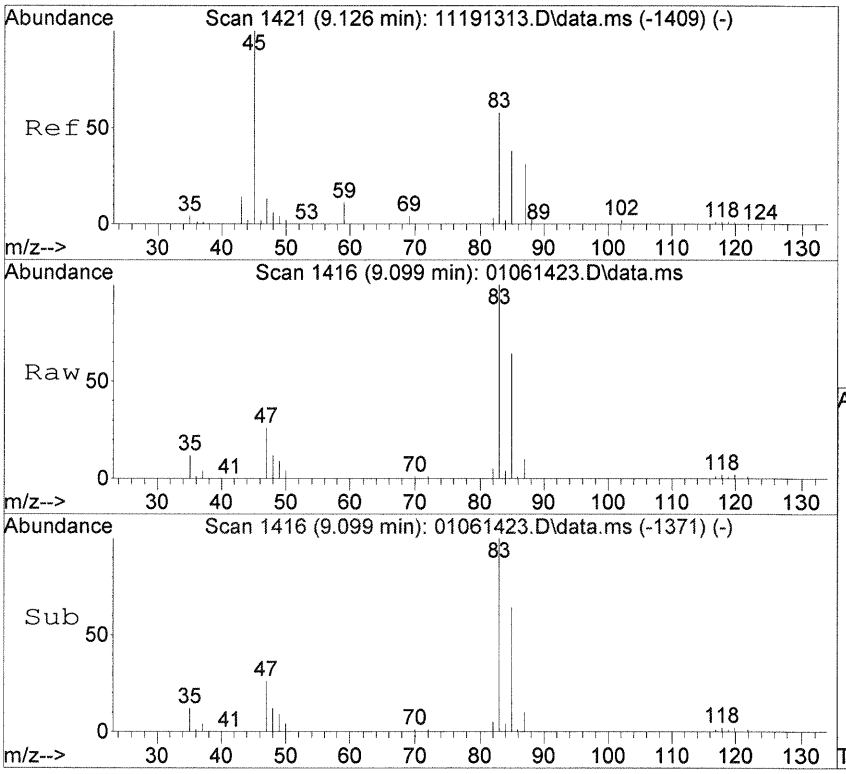


#30
Ethyl Acetate
Concen: 0.15 ng
RT: 9.21 min Scan# 1436
Delta R.T. 0.011 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 61 Resp: 1251

Ion	Ratio	Lower	Upper
61	100		
70	52.4	58.6	98.6#

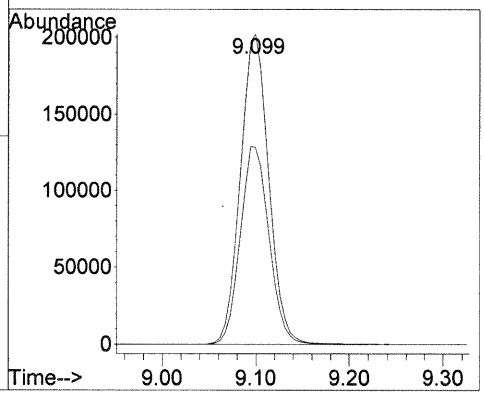


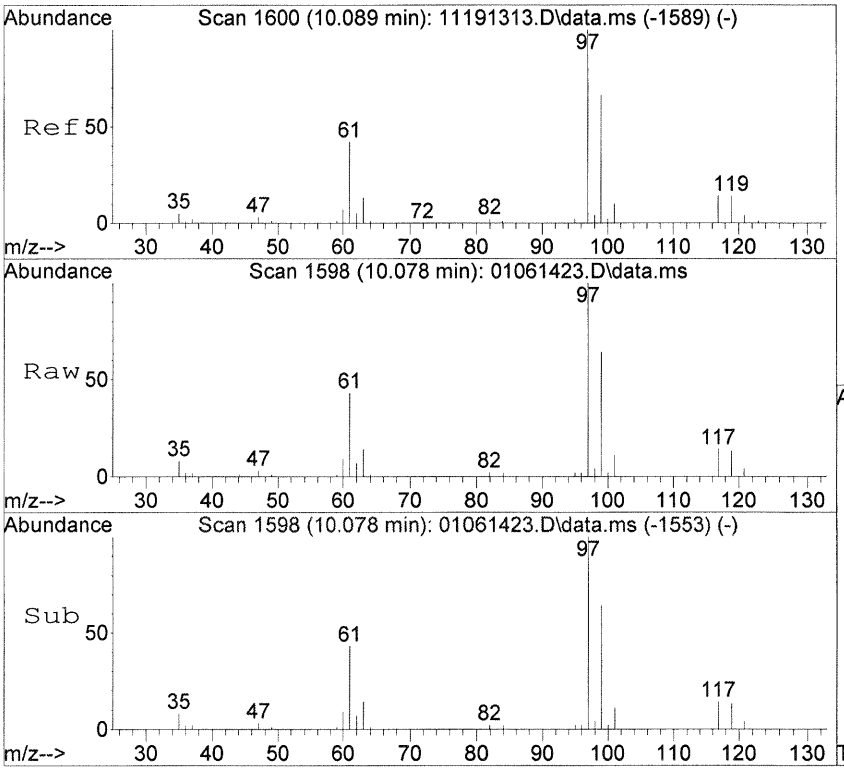


#32
Chloroform
Concen: 11.30 ng
RT: 9.10 min Scan# 1416
Delta R.T. -0.005 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 83 Resp: 427457

Ion	Ratio	Lower	Upper
83	100		
85	64.5	45.2	85.2

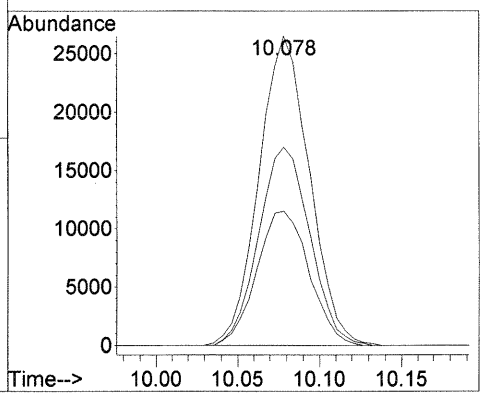


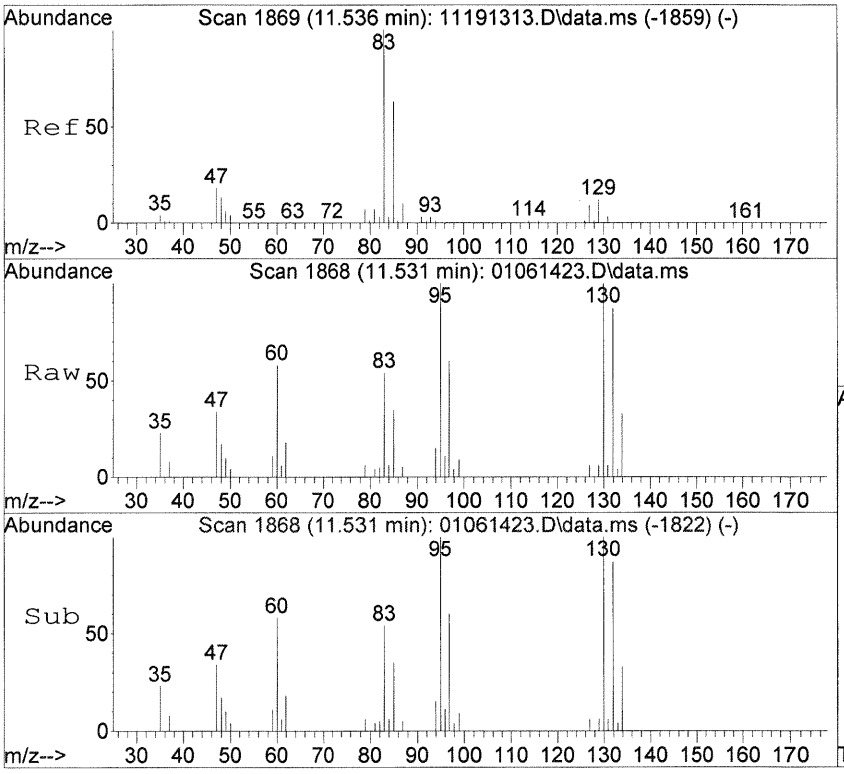


#38
1,1,1-Trichloroethane
Concen: 1.61 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 97 Resp: 56565

Ion	Ratio	Lower	Upper
97	100		
99	65.1	44.8	84.8
61	45.1	20.9	60.9

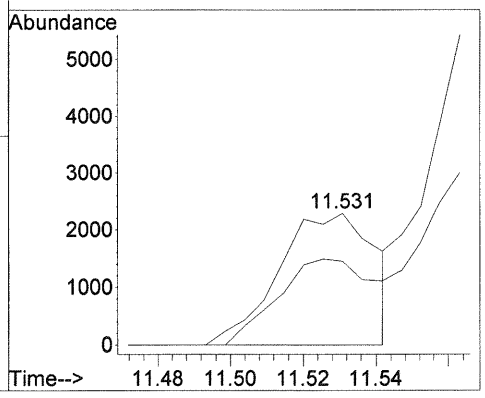


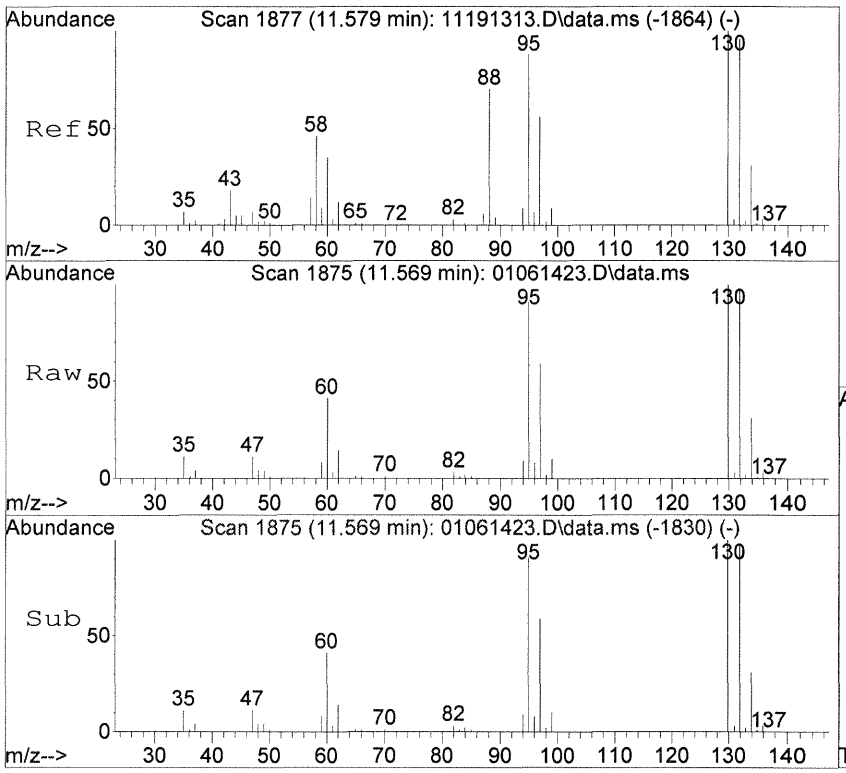


#46
Bromodichloromethane
Concen: 0.14 ng
RT: 11.53 min Scan# 1868
Delta R.T. 0.000 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion: 83 Resp: 4180

Ion	Ratio	Lower	Upper
83	100		
85	65.0	43.9	83.9

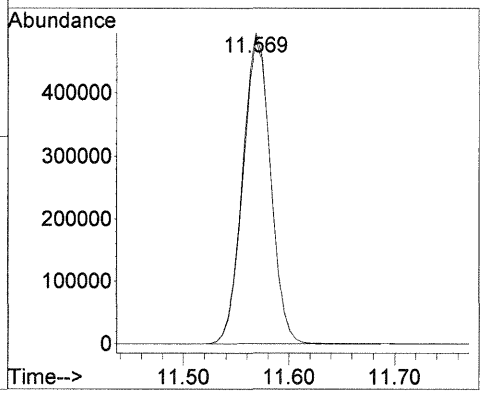


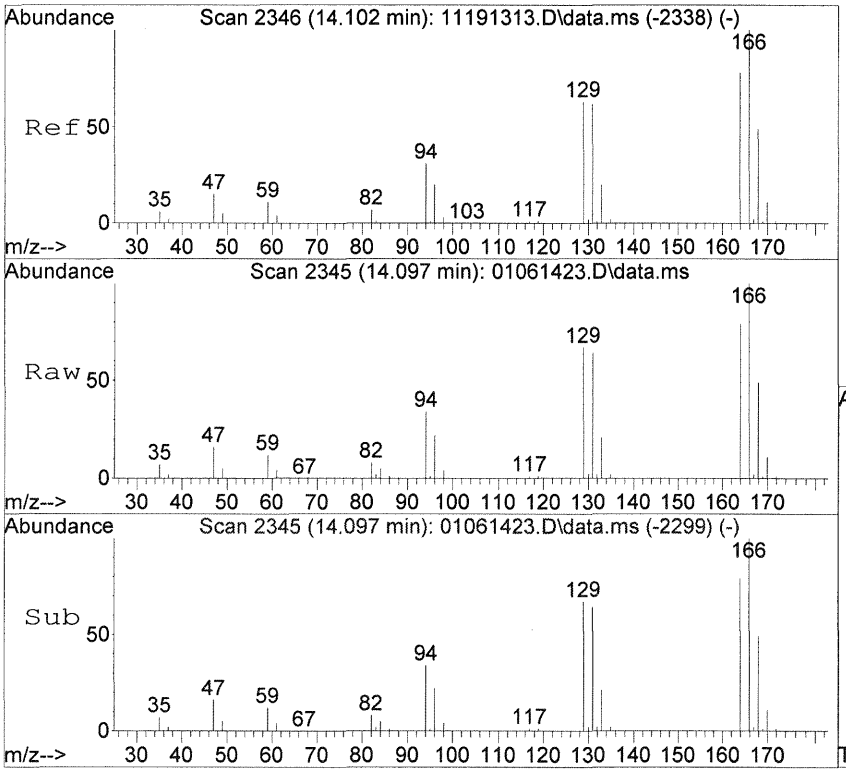


#47
Trichloroethene
Concen: 32.26 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion:130 Resp: 914050

Ion	Ratio	Lower	Upper
130	100		
132	97.1	76.5	116.5

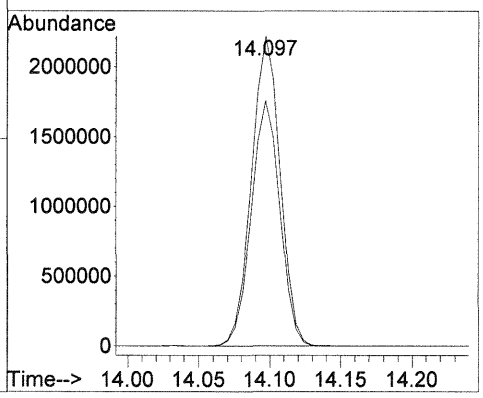




#64
Tetrachloroethene
Concen: 86.07 ng
RT: 14.10 min Scan# 2345
Delta R.T. 0.000 min
Lab File: 01061423.D
Acq: 6 Jan 2014 19:03

Tgt Ion:166 Resp: 3120408

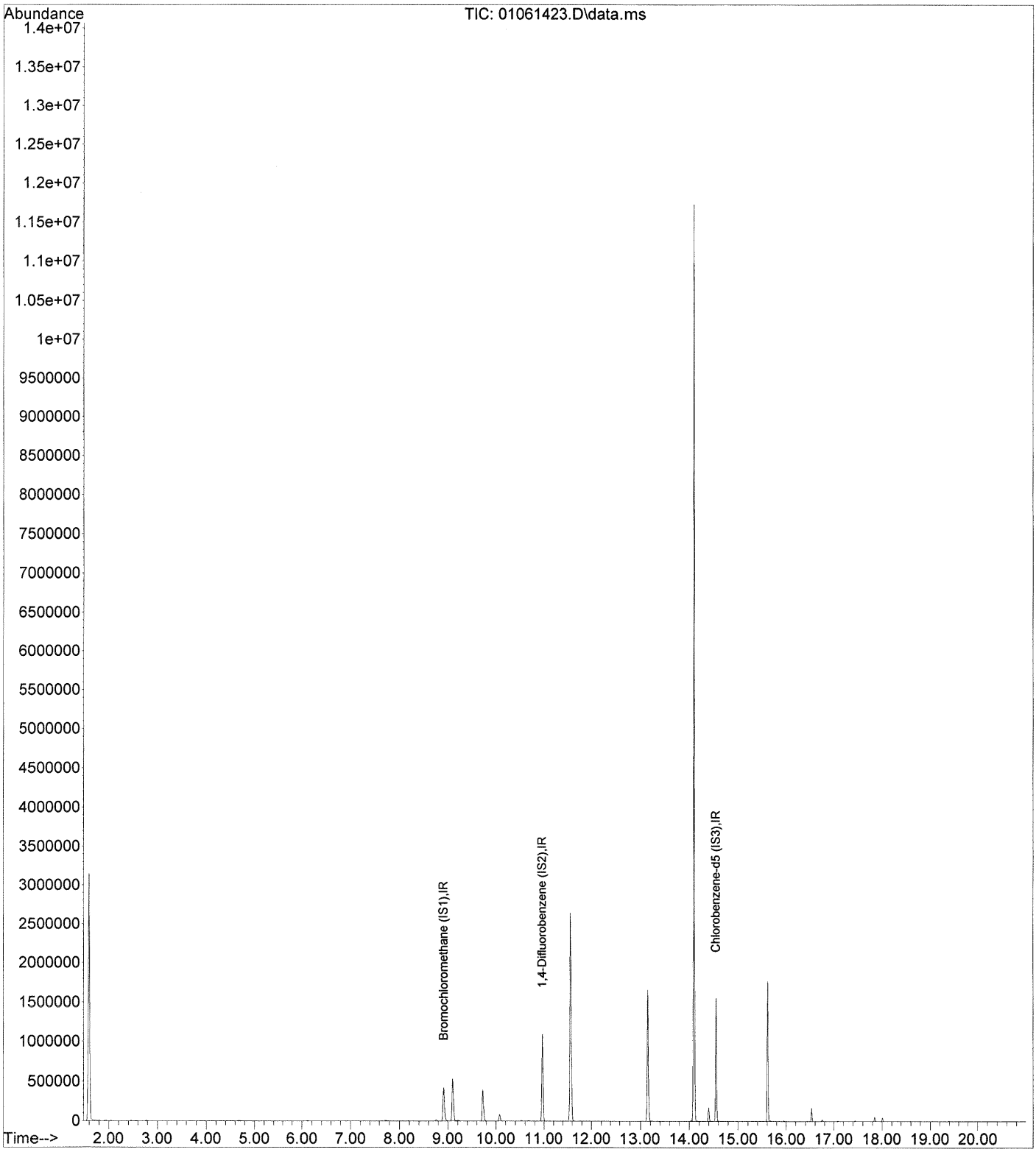
Ion	Ratio	Lower	Upper
166	100		
164	79.1	58.5	98.5



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061423.D
Acq On : 6 Jan 2014 19:03 Operator: WA
Sample : P1305675-004 (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:44:36 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061423.D
Acq On : 6 Jan 2014 19:03 Operator: WA
Sample : P1305675-004 (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:44:36 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	179286	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	914164	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	402102	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	1.78	83	899	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.66	84	282	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.86	91	431	N.D.	
24) 1,2,3-Trichloropropane	15.36	75	57	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	18.01	119	124	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

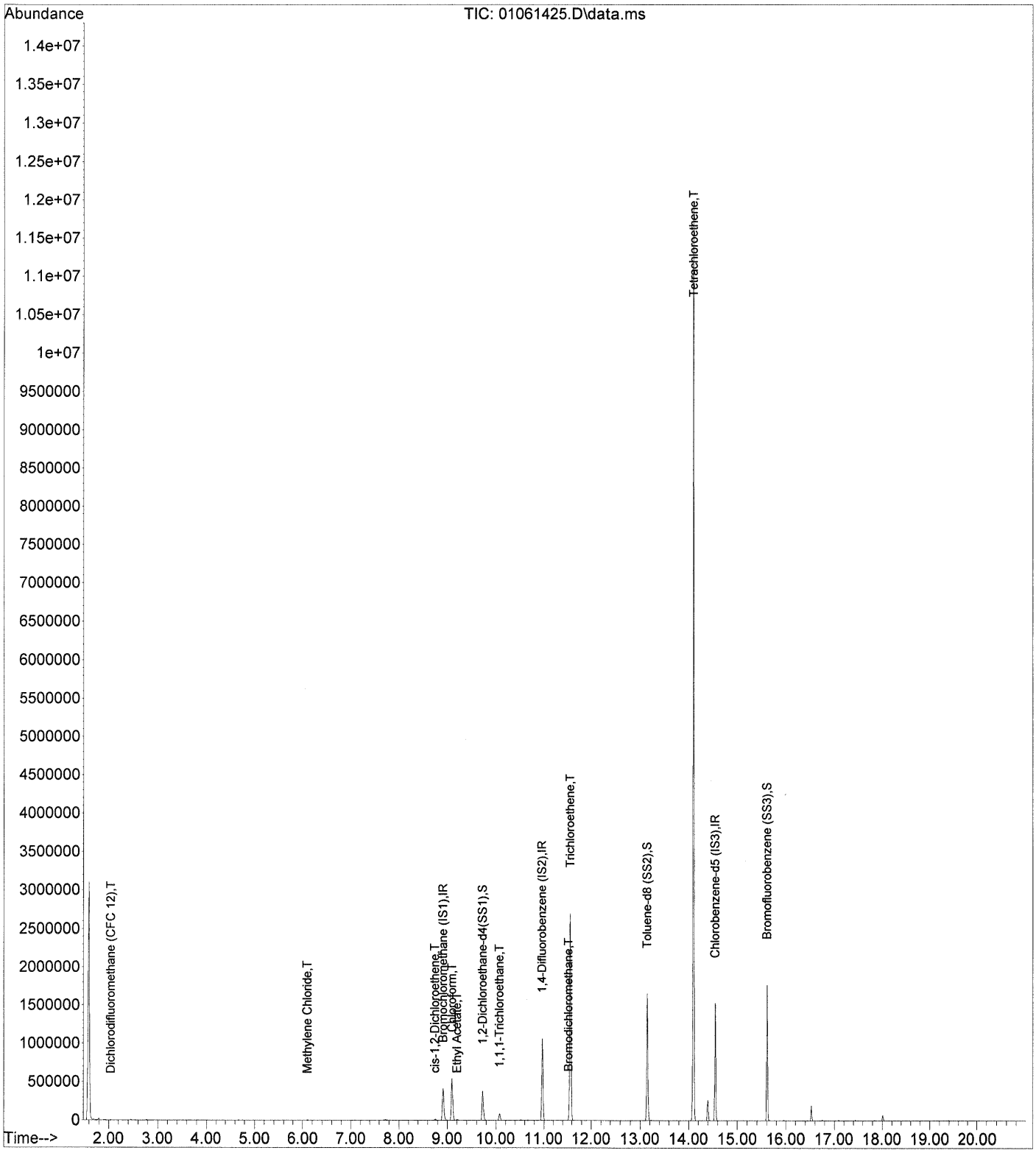
(#) = qualifier out of range (m) = manual integration (+) = signals summed

DA 1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061425.D
Acq On : 6 Jan 2014 20:02 Operator: WA
Sample : P1305675-005 (70mL)
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 08 14:18:57 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061425.D
Acq On : 6 Jan 2014 20:02 Operator: WA
Sample : P1305675-005 (70mL)
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 08 14:18:57 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	175197	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	902612	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	393942	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	280040	14.706 ng	0.00
Spiked Amount 12.500			Recovery	= 117.68%	
57) Toluene-d8 (SS2)	13.14	98	976326	11.634 ng	0.00
Spiked Amount 12.500			Recovery	= 93.04%	
73) Bromofluorobenzene (SS3)	15.61	174	434621	12.904 ng	0.00
Spiked Amount 12.500			Recovery	= 103.20%	
Target Compounds					Qvalue
2) Propene	1.93	42	677	N.D.	
3) Dichlorodifluoromethan...	2.04	85	4598	0.110 ng	97
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	3.20	94	255	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	4.07	45	881	N.D.	
11) Acetonitrile	4.25	41	248	N.D.	
12) Acrolein	0.00	56	0	N.D.	
13) Acetone	4.68	58	1112	N.D.	
14) Trichlorofluoromethane	4.75	101	2088	N.D.	
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	2081	0.090 ng	79
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	6.59	151	169	N.D.	
22) Carbon Disulfide	6.21	76	3901	N.D.	
23) trans-1,2-Dichloroethene	7.47	61	383	N.D.	
24) 1,1-Dichloroethane	7.71	63	2811	N.D.	
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	0.00	72	0	N.D.	
28) cis-1,2-Dichloroethene	8.75	61	9918	0.337 ng	96
29) Diisopropyl Ether	0.00	87	0	N.D. d	
30) Ethyl Acetate	9.20	61	1941	0.240 ng	86
31) n-Hexane	0.00	57	0	N.D.	
32) Chloroform	9.10	83	431190	11.603 ng	100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	58384	1.680 ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	0.00	56	0	N.D.	
41) Benzene	10.52	78	5146	N.D.	
42) Carbon Tetrachloride	10.66	117	2355	N.D.	
43) Cyclohexane	10.67	84	265	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

1/8/14

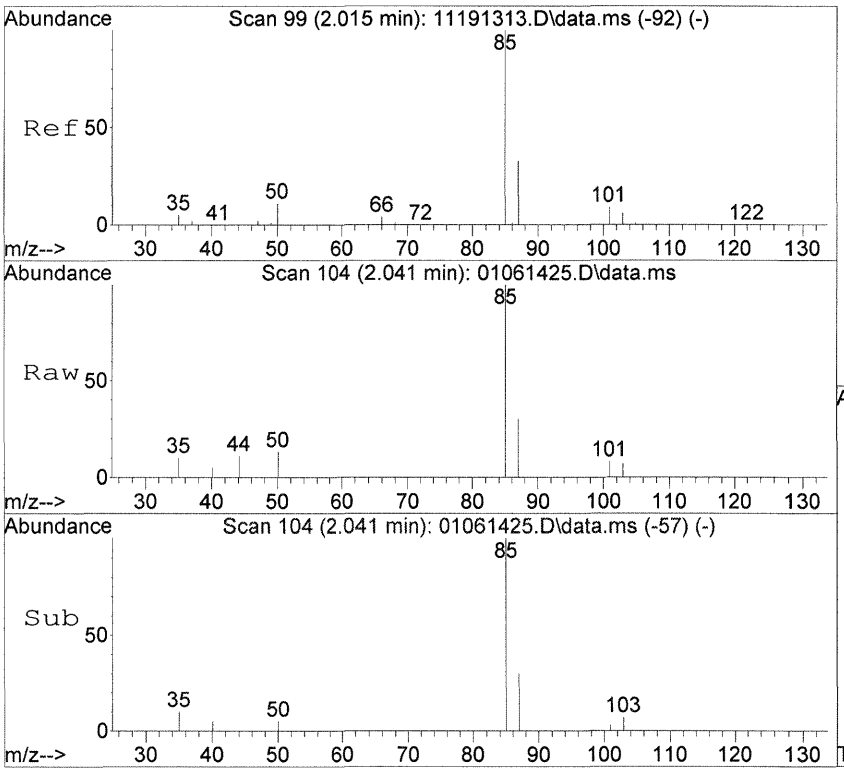
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061425.D
Acq On : 6 Jan 2014 20:02 Operator: WA
Sample : P1305675-005 (70mL)
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 08 14:18:57 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	4079	0.138 ng	94
47) Trichloroethene	11.57	130	933806	33.382 ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	3785	N.D.	
59) 2-Hexanone	13.67	43	205	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.10	166	3164622	89.001 ng	99
65) Chlorobenzene	14.58	112	196	N.D.	
66) Ethylbenzene	14.86	91	374	N.D.	
67) m- & p-Xylenes	15.00	91	71	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.23	104	126	N.D.	
70) o-Xylene	15.30	91	123	N.D.	
71) n-Nonane	15.61	43	157	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.61	105	592	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	15.96	105	2335	N.D.	
78) 4-Ethyltoluene	15.96	105	2285	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	16.53	118	2291	N.D.	
81) 2-Ethyltoluene	16.52	105	998	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	998	N.D.	
83) n-Decane	16.61	57	320	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	16.53	146	127	N.D.	
86) 1,4-Dichlorobenzene	16.53	146	127	N.D.	
87) sec-Butylbenzene	16.52	105	998	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.56	57	119	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	18.36	128	298	N.D.	
96) n-Dodecane	18.40	57	347	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	16.53	119	3673	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

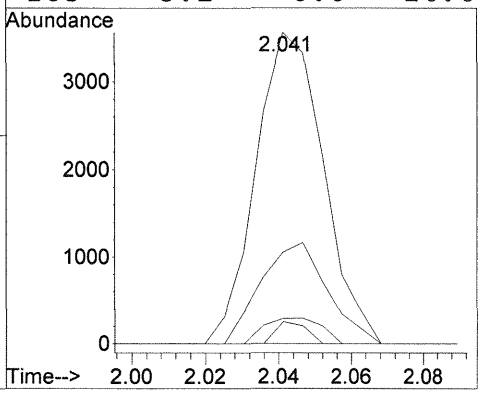
(#) = qualifier out of range (m) = manual integration (+) = signals summed

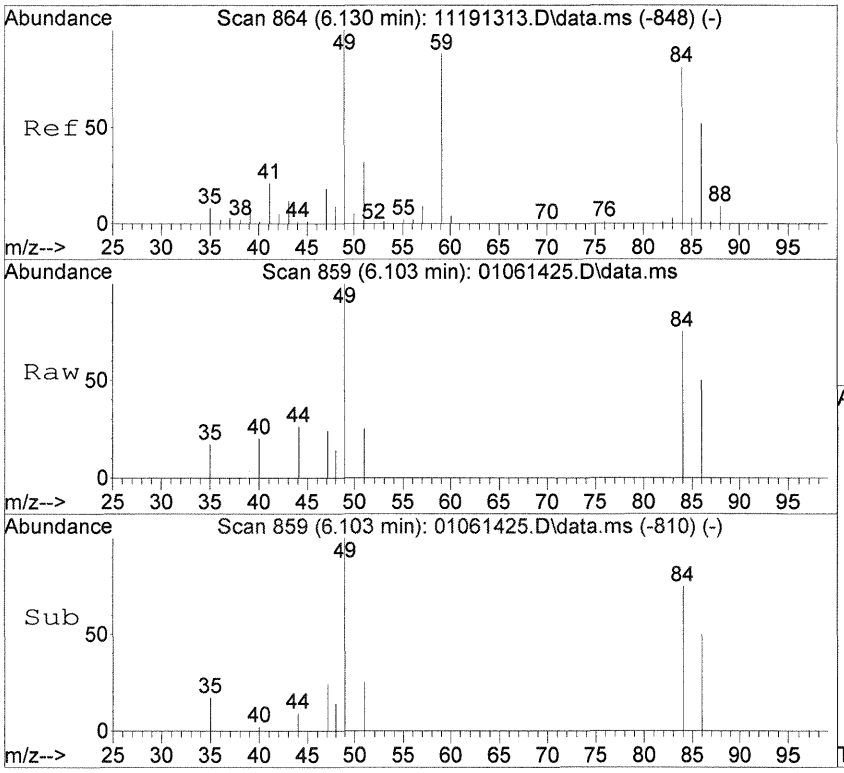


#3
Dichlorodifluoromethane (CFC 1:
Concen: 0.11 ng
RT: 2.04 min Scan# 104
Delta R.T. 0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 85 Resp: 4598

Ion	Ratio	Lower	Upper
85	100		
87	32.2	12.7	52.7
101	7.0	0.0	29.1
103	3.2	0.0	26.0

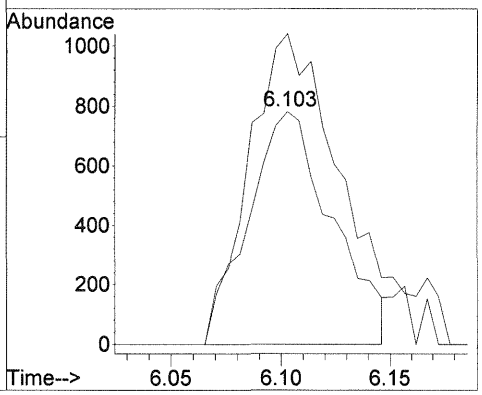


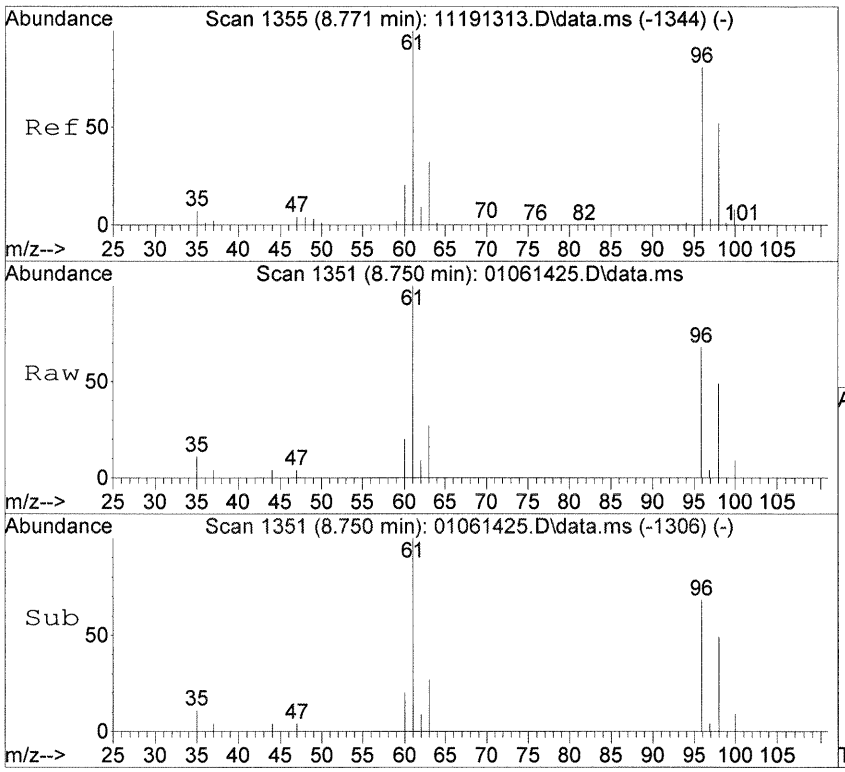


#19
Methylene Chloride
Concen: 0.09 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 84 Resp: 2081

Ion	Ratio	Lower	Upper
84	100		
49	149.9	101.0	151.0

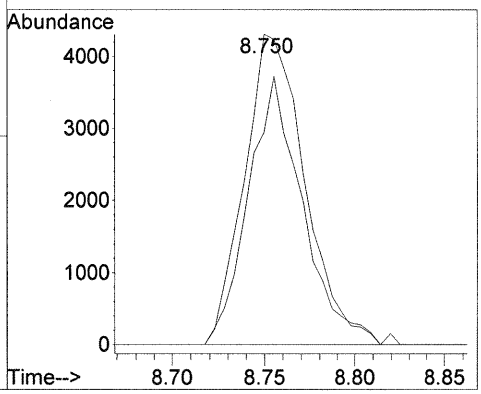


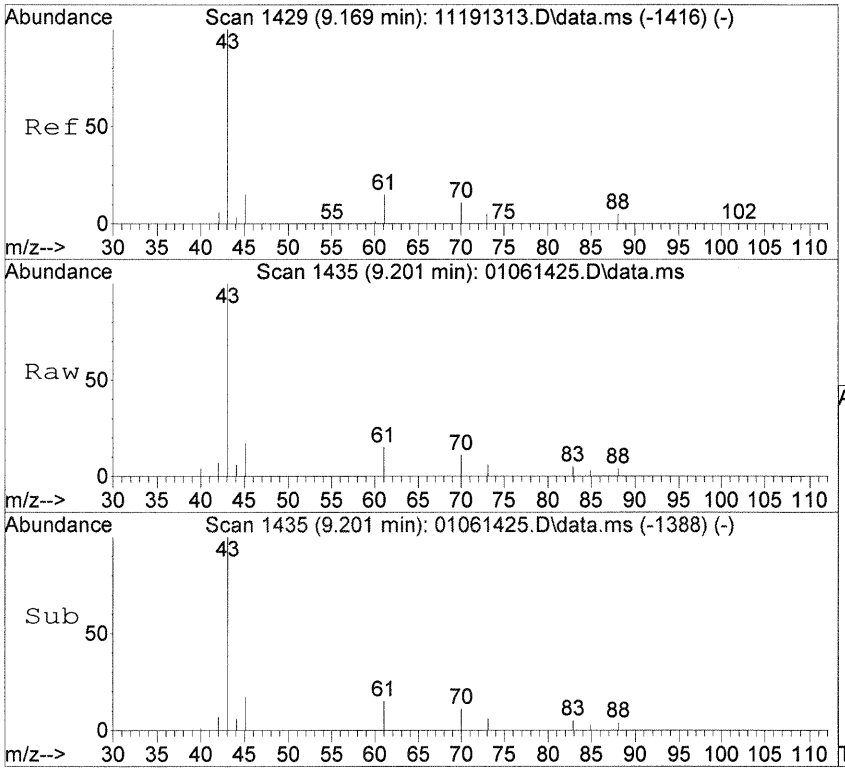


#28
cis-1,2-Dichloroethene
Concen: 0.34 ng
RT: 8.75 min Scan# 1351
Delta R.T. -0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 61 Resp: 9918

Ion	Ratio	Lower	Upper
61	100		
96	77.8	61.4	101.4

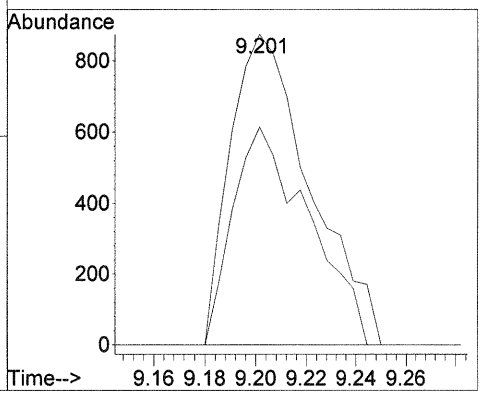


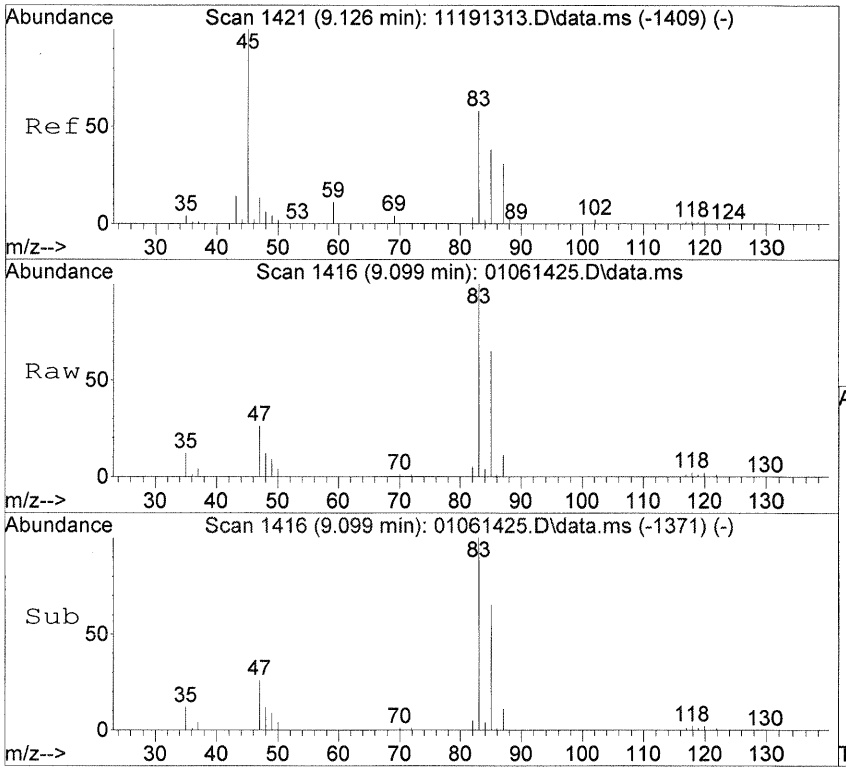


#30
Ethyl Acetate
Concen: 0.24 ng
RT: 9.20 min Scan# 1435
Delta R.T. 0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 61 Resp: 1941

Ion	Ratio	Lower	Upper
61	100		
70	66.8	58.6	98.6

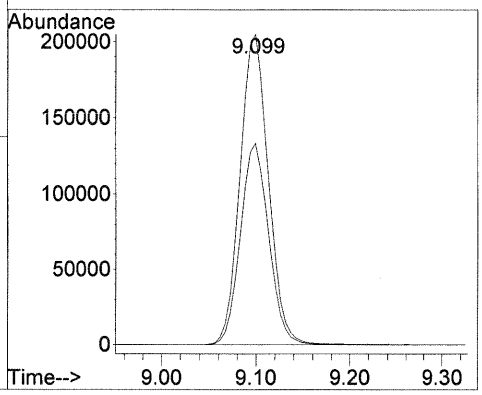


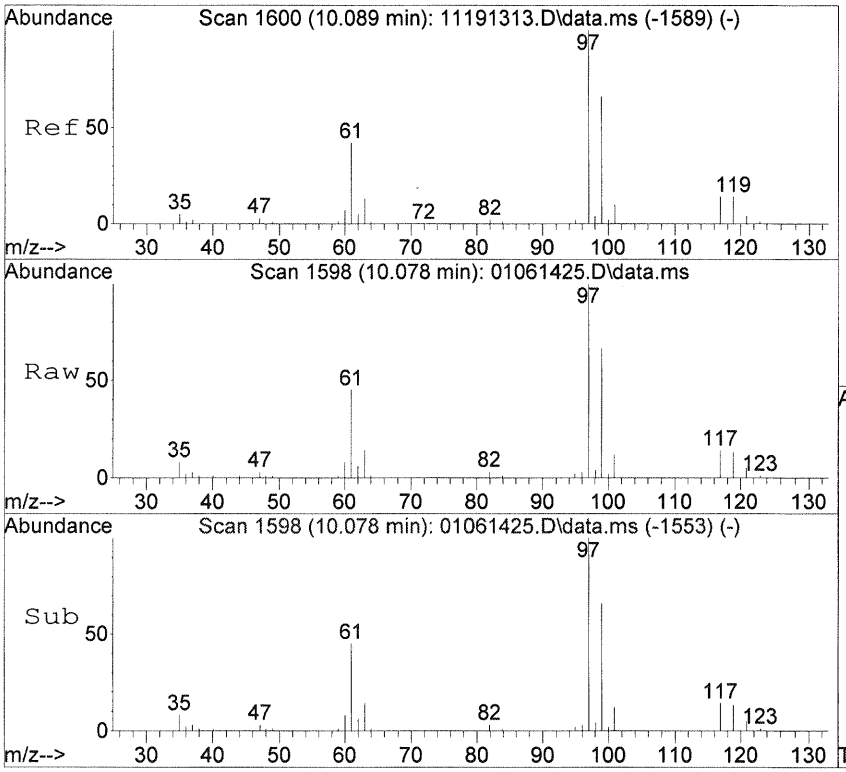


#32
Chloroform
Concen: 11.60 ng
RT: 9.10 min Scan# 1416
Delta R.T. -0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 83 Resp: 431190

Ion	Ratio	Lower	Upper
83	100		
85	65.0	45.2	85.2

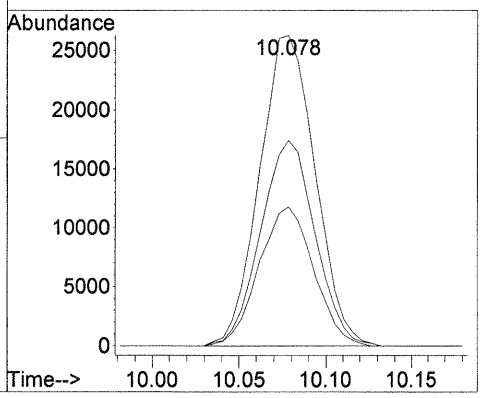


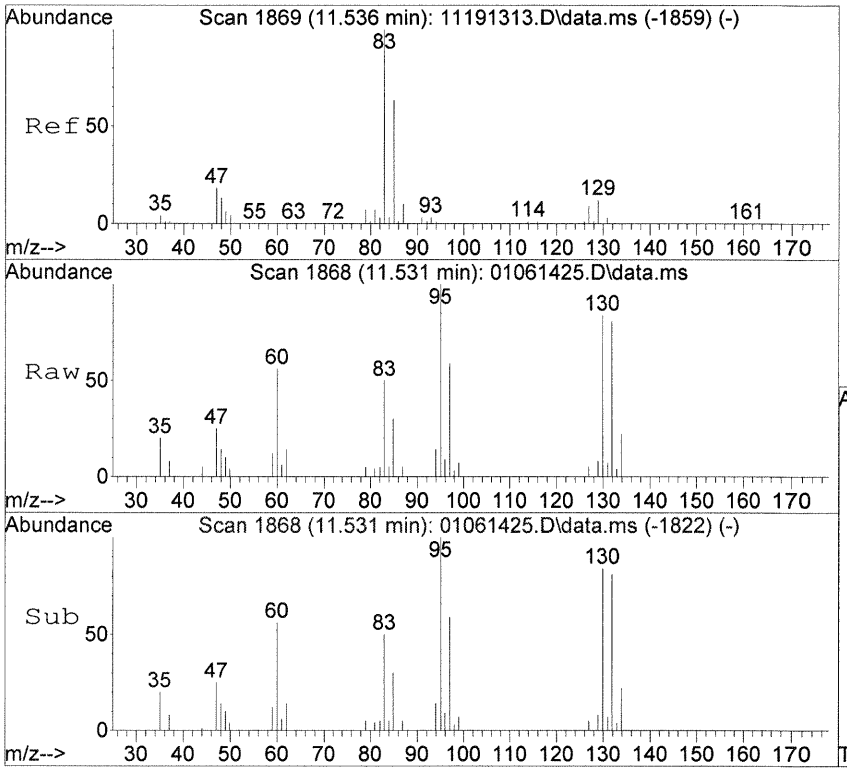


#38
1,1,1-Trichloroethane
Concen: 1.68 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 97 Resp: 58384

Ion	Ratio	Lower	Upper
97	100		
99	64.8	44.8	84.8
61	44.0	20.9	60.9

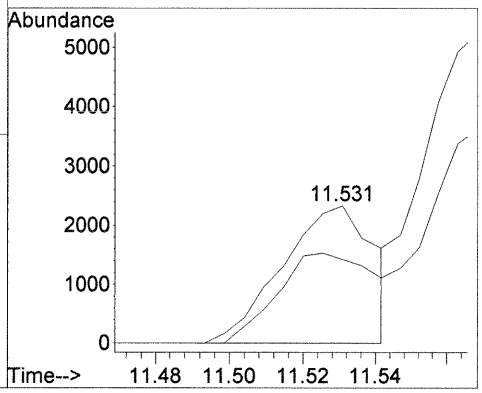


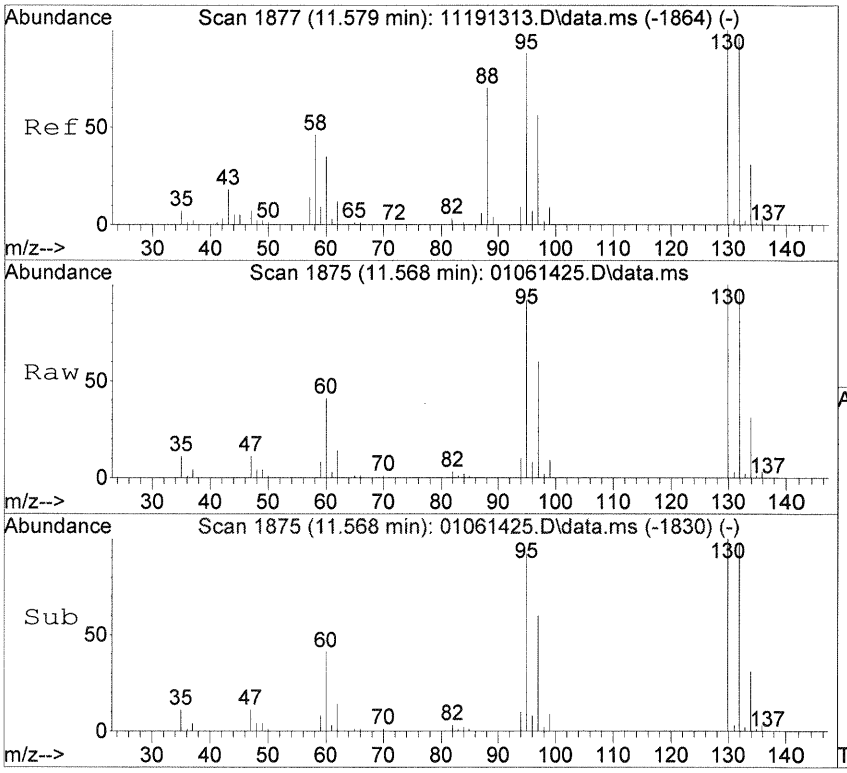


#46
Bromodichloromethane
Concen: 0.14 ng
RT: 11.53 min Scan# 1868
Delta R.T. -0.000 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion: 83 Resp: 4079

Ion	Ratio	Lower	Upper
83	100		
85	68.7	43.9	83.9

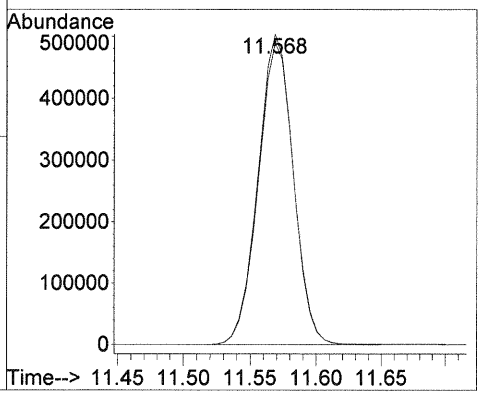


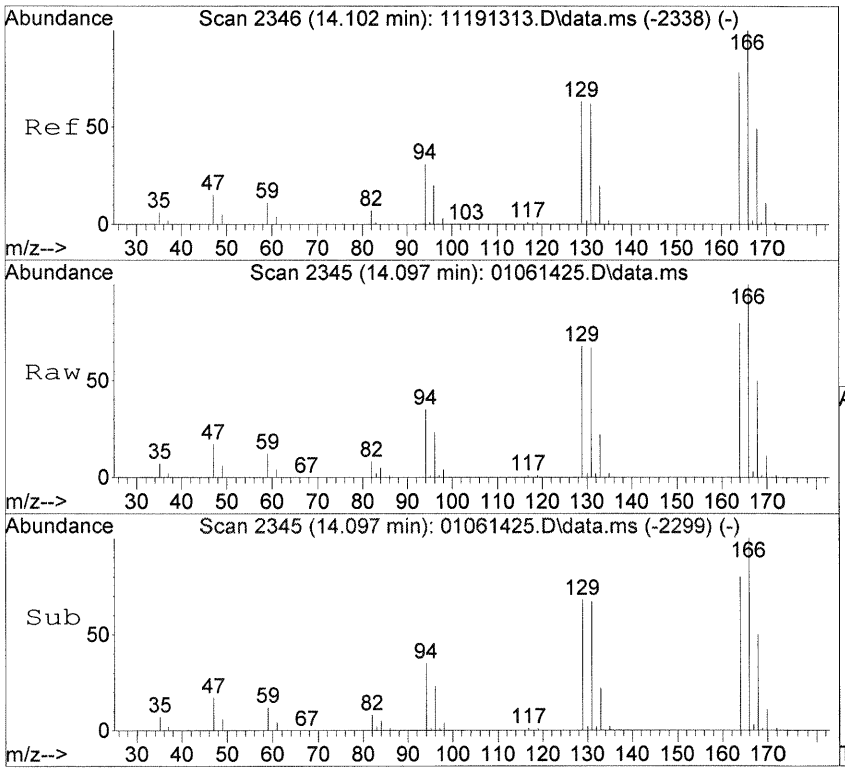


#47
Trichloroethene
Concen: 33.38 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion:130 Resp: 933806

Ion	Ratio	Lower	Upper
130	100		
132	97.8	76.5	116.5

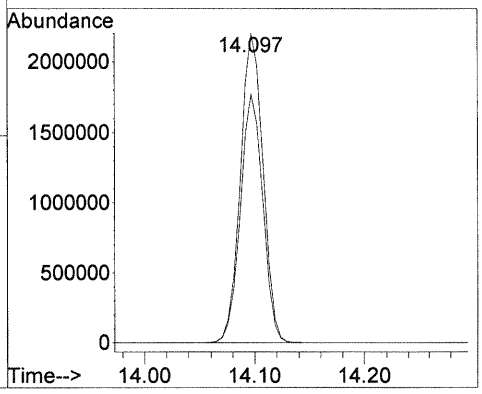




#64
Tetrachloroethene
Concen: 89.00 ng
RT: 14.10 min Scan# 2345
Delta R.T. -0.000 min
Lab File: 01061425.D
Acq: 6 Jan 2014 20:02

Tgt Ion:166 Resp: 3164622

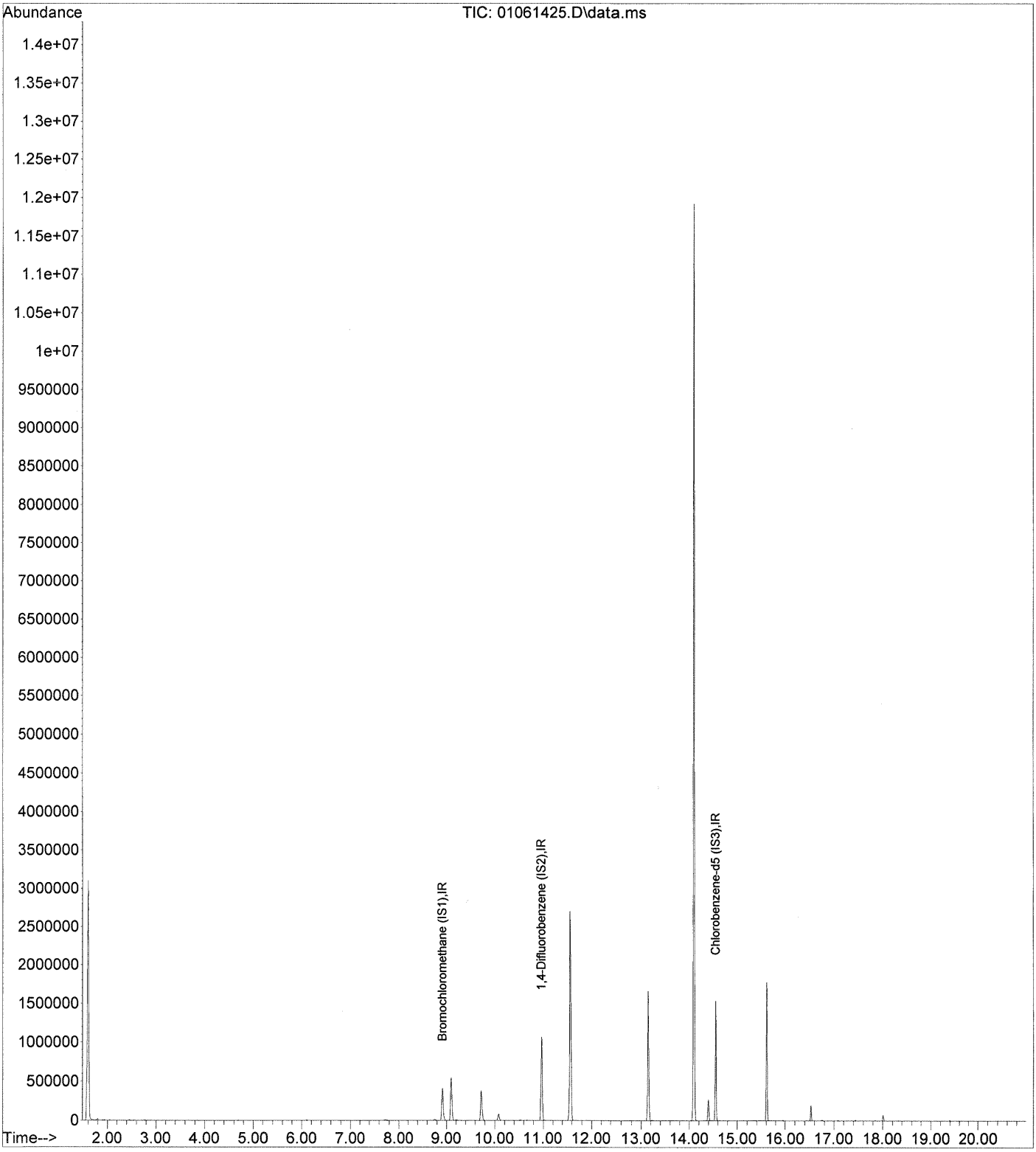
Ion	Ratio	Lower	Upper
166	100		
164	79.8	58.5	98.5



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061425.D
Acq On : 6 Jan 2014 20:02 Operator: WA
Sample : P1305675-005 (70mL)
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 08 14:45:15 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061425.D
Acq On : 6 Jan 2014 20:02 Operator: WA
Sample : P1305675-005 (70mL)
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 08 14:45:15 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	175189	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	903541	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	394436	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	1.78	83	1053	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.67	84	265	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.86	91	374	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	18.01	119	199	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

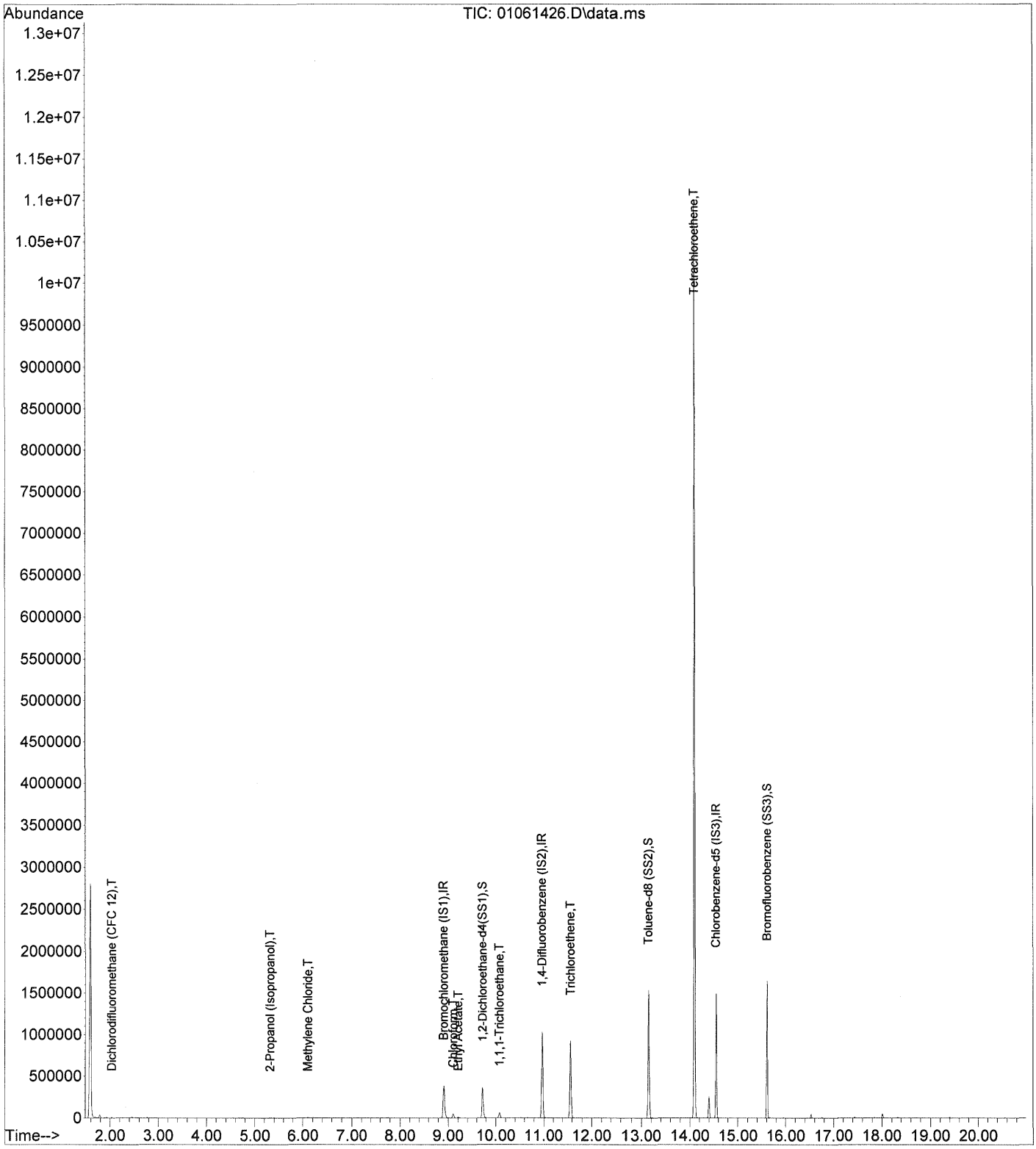
(#) = qualifier out of range (m) = manual integration (+) = signals summed

DA 1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061426.D
Acq On : 6 Jan 2014 20:31 Operator: WA
Sample : P1305675-006 (100mL)
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 08 14:19:54 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061426.D
Acq On : 6 Jan 2014 20:31 Operator: WA
Sample : P1305675-006 (100mL)
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 08 14:19:54 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.91	130	165364	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	858692	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	375995	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	267730	14.895 ng	0.00
Spiked Amount 12.500			Recovery	= 119.20%	
57) Toluene-d8 (SS2)	13.14	98	926095	11.562 ng	0.00
Spiked Amount 12.500			Recovery	= 92.48%	
73) Bromofluorobenzene (SS3)	15.61	174	416725	12.963 ng	0.00
Spiked Amount 12.500			Recovery	= 103.68%	

Target Compounds					Qvalue
2) Propene	1.92	42	798	N.D.	
3) Dichlorodifluoromethan...	2.04	85	6601	0.167 ng	98
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	3.21	94	563	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	4.06	45	578	N.D.	
11) Acetonitrile	4.25	41	48	N.D.	
12) Acrolein	0.00	56	0	N.D.	
13) Acetone	4.67	58	621	N.D.	
14) Trichlorofluoromethane	4.76	101	3157	N.D.	
15) 2-Propanol (Isopropanol)	5.32	45	8245	0.141 ng	76
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	2018	0.093 ng	98
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	6.58	151	138	N.D.	
22) Carbon Disulfide	6.20	76	4927	N.D.	
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.	
24) 1,1-Dichloroethane	7.72	63	1022	N.D.	
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	0.00	72	0	N.D.	
28) cis-1,2-Dichloroethene	8.76	61	650	N.D.	
29) Diisopropyl Ether	0.00	87	0	N.D. d	
30) Ethyl Acetate	9.20	61	2082	0.273 ng	99
31) n-Hexane	0.00	57	0	N.D.	
32) Chloroform	9.10	83	39596	1.129 ng	99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	42578	1.288 ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	10.78	56	443	N.D.	
41) Benzene	10.52	78	1926	N.D.	
42) Carbon Tetrachloride	10.67	117	2070	N.D.	
43) Cyclohexane	10.78	84	139	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

1/8/14

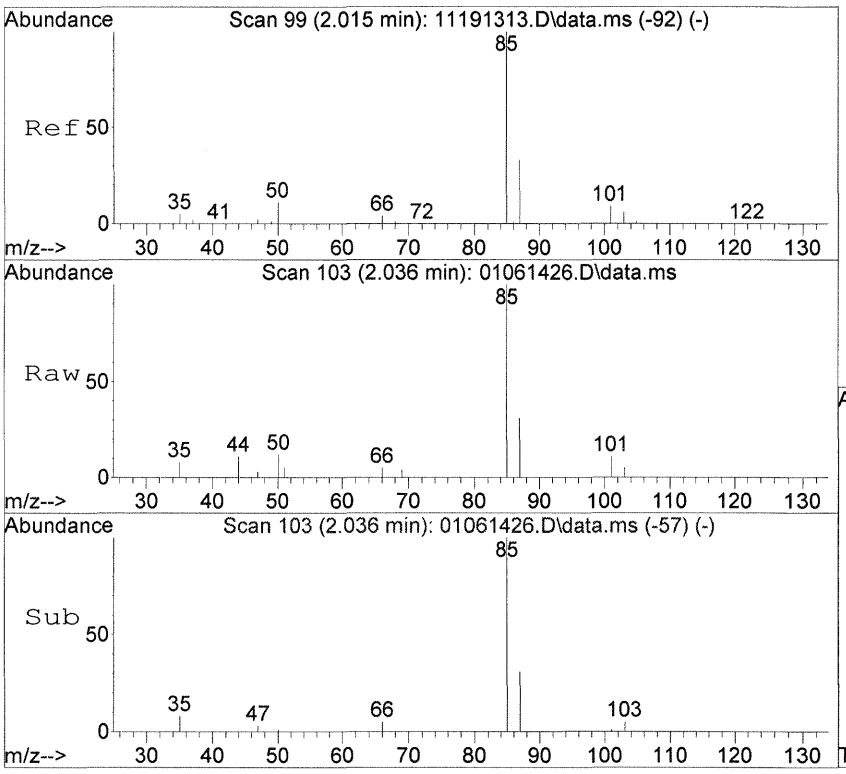
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061426.D
Acq On : 6 Jan 2014 20:31 Operator: WA
Sample : P1305675-006 (100mL)
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 08 14:19:54 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	0.00	83	0	N.D. d	
47) Trichloroethene	11.57	130	319386	12.001 ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	3820	N.D.	
59) 2-Hexanone	13.67	43	274	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.10	43	107	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.10	166	2844496	83.817 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	14.86	91	385	N.D.	
67) m- & p-Xylenes	14.98	91	759	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	15.30	91	127	N.D.	
71) n-Nonane	15.34	43	314	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.61	105	524	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	15.96	105	1282	N.D.	
78) 4-Ethyltoluene	15.96	105	1282	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	16.52	118	559	N.D.	
81) 2-Ethyltoluene	16.52	105	354	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	354	N.D.	
83) n-Decane	16.61	57	256	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	16.52	105	354	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.56	57	191	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	18.36	128	246	N.D.	
96) n-Dodecane	18.40	57	441	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	16.52	119	900	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

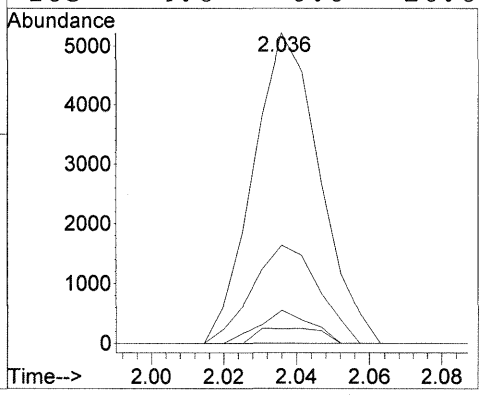
(#) = qualifier out of range (m) = manual integration (+) = signals summed

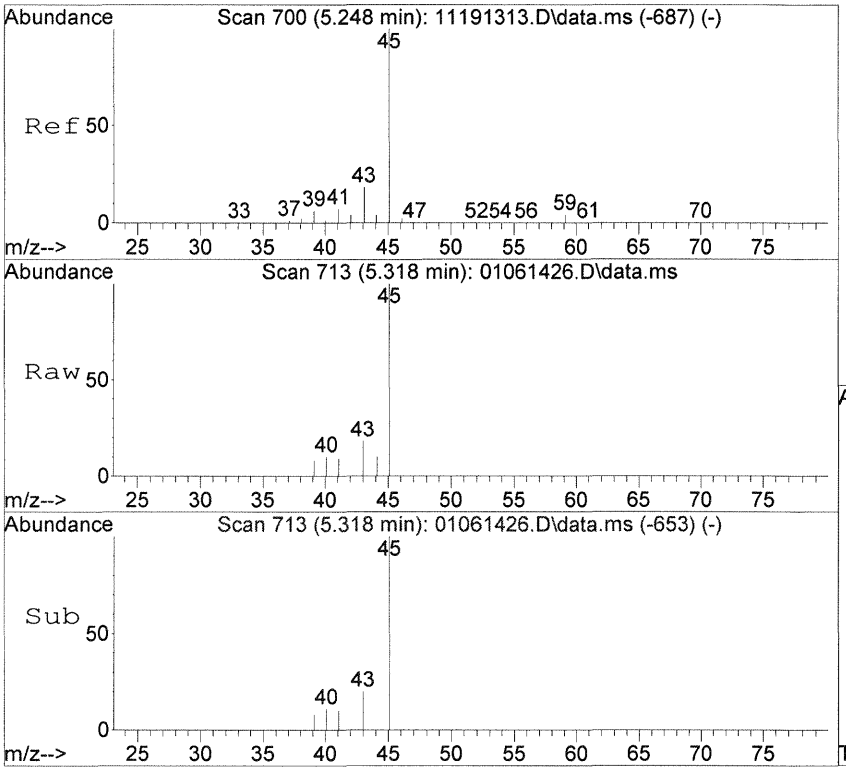


#3
Dichlorodifluoromethane (CFC 1:
Concen: 0.17 ng
RT: 2.04 min Scan# 103
Delta R.T. 0.000 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 85 Resp: 6601

Ion	Ratio	Lower	Upper
85	100		
87	31.4	12.7	52.7
101	8.3	0.0	29.1
103	4.6	0.0	26.0

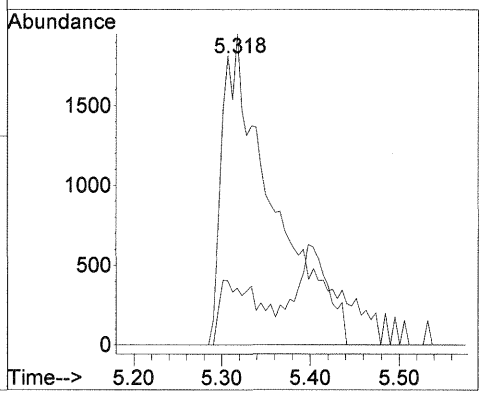


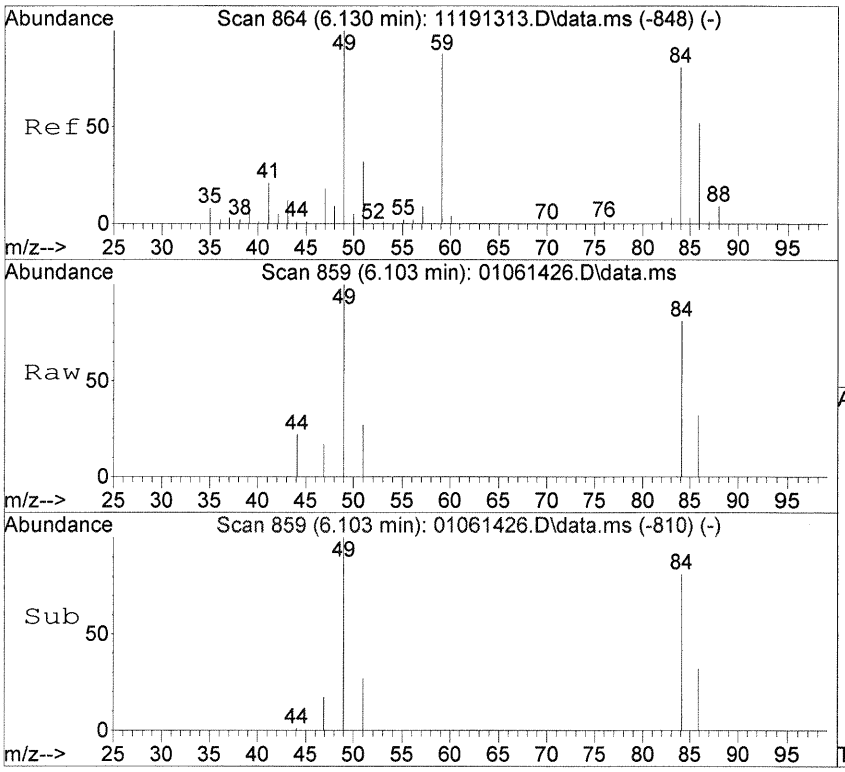


#15
2-Propanol (Isopropanol)
Concen: 0.14 ng
RT: 5.32 min Scan# 713
Delta R.T. 0.075 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 45 Resp: 8245

Ion	Ratio	Lower	Upper
45	100		
43	7.2	0.0	37.6

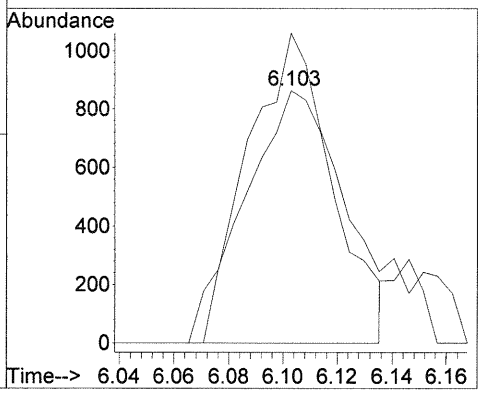


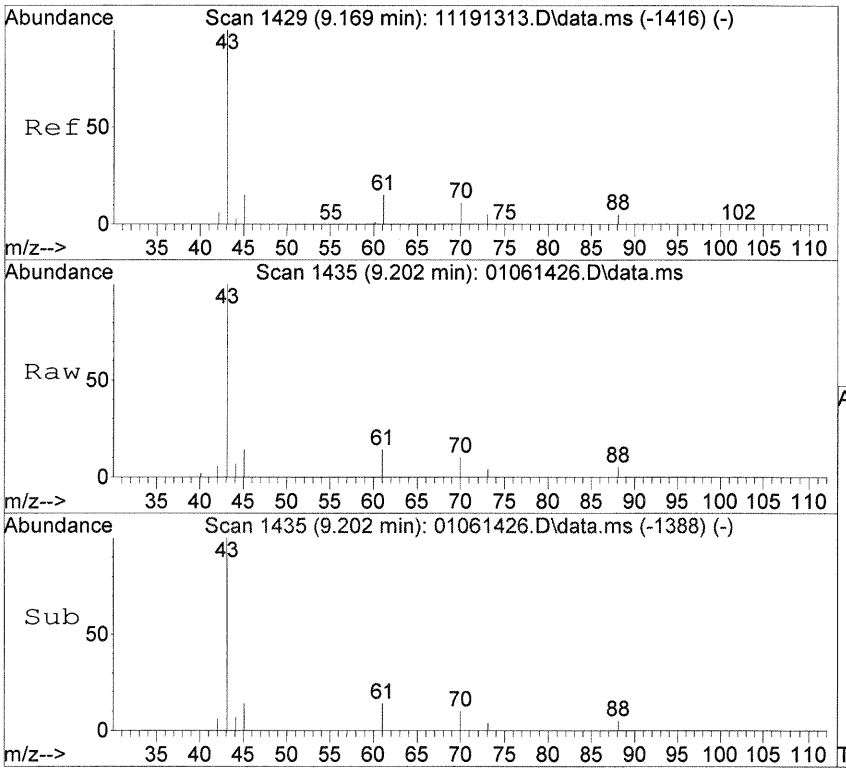


#19
Methylene Chloride
Concen: 0.09 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 84 Resp: 2018

Ion	Ratio	Lower	Upper
84	100		
49	128.7	101.0	151.0

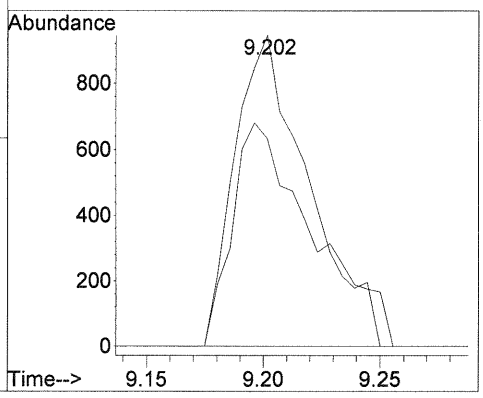


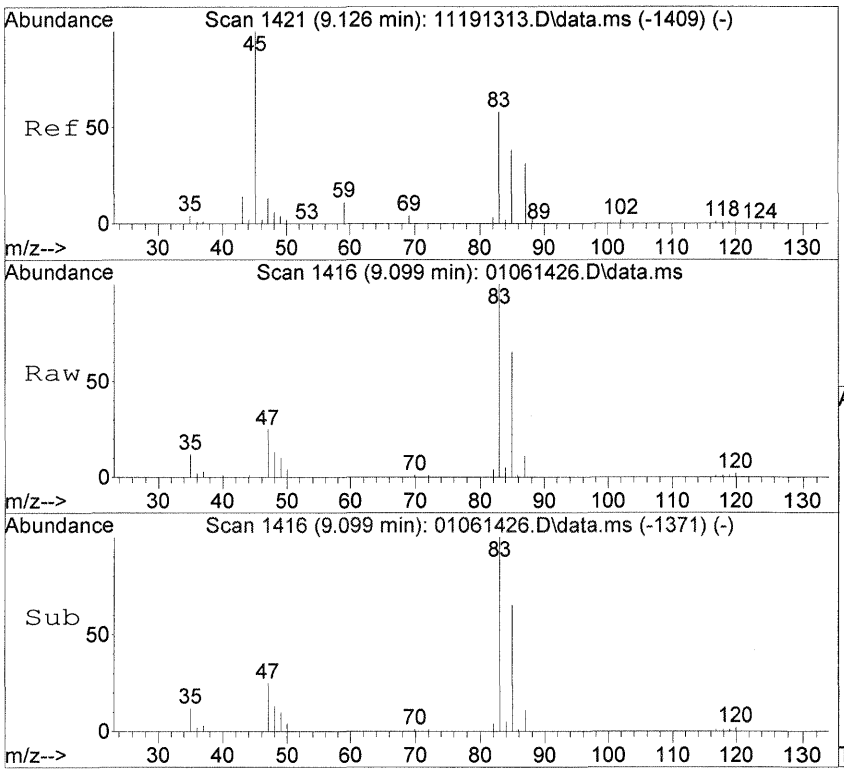


#30
Ethyl Acetate
Concen: 0.27 ng
RT: 9.20 min Scan# 1435
Delta R.T. 0.005 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 61 Resp: 2082

Ion	Ratio	Lower	Upper
61	100		
70	79.7	58.6	98.6

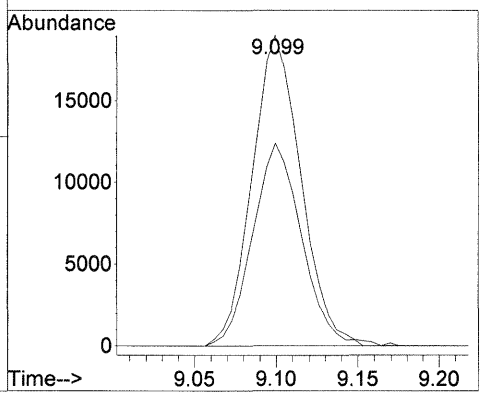


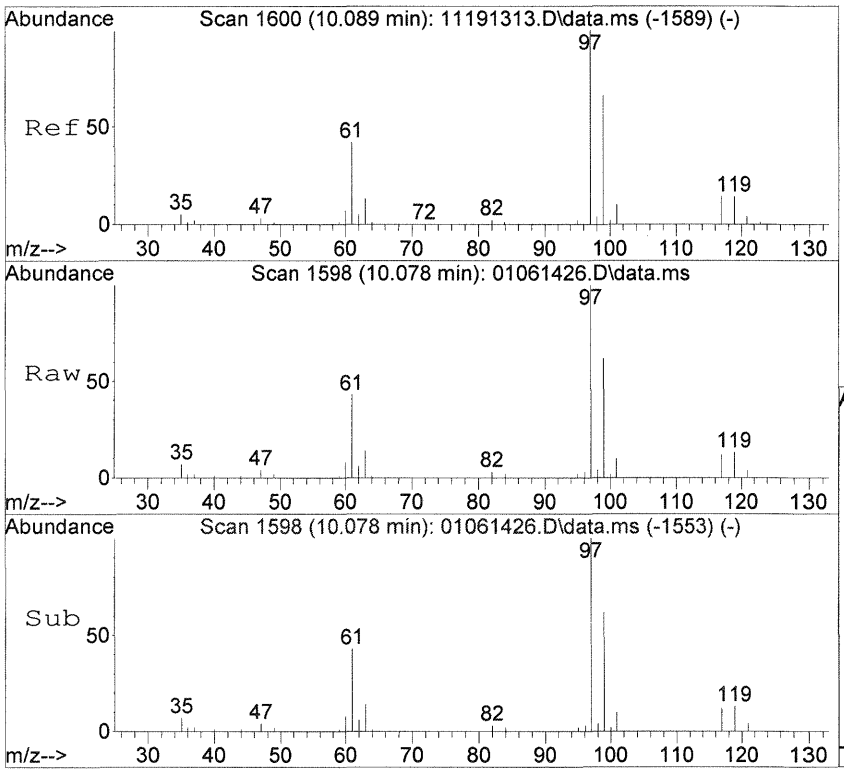


#32
Chloroform
Concen: 1.13 ng
RT: 9.10 min Scan# 1416
Delta R.T. -0.005 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 83 Resp: 39596

Ion	Ratio	Lower	Upper
83	100		
85	64.8	45.2	85.2

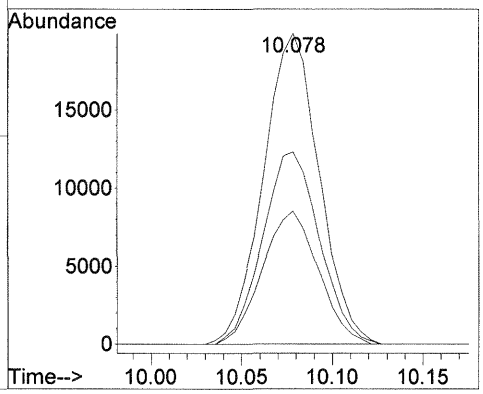


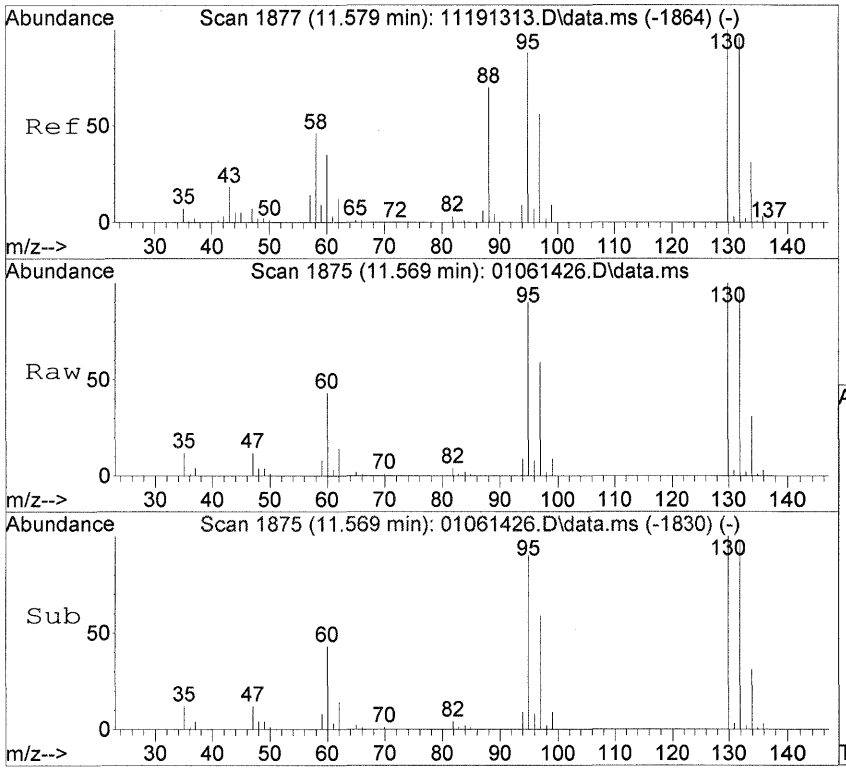


#38
1,1,1-Trichloroethane
Concen: 1.29 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion: 97 Resp: 42578

Ion	Ratio	Lower	Upper
97	100		
99	63.0	44.8	84.8
61	43.2	20.9	60.9

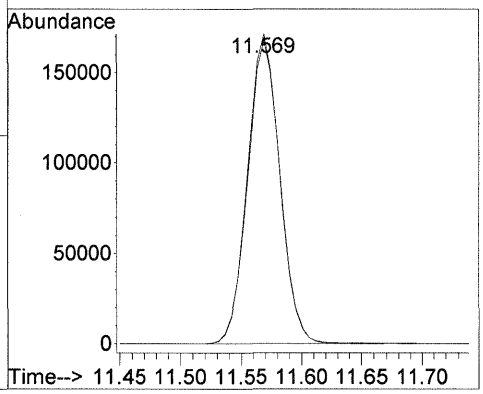


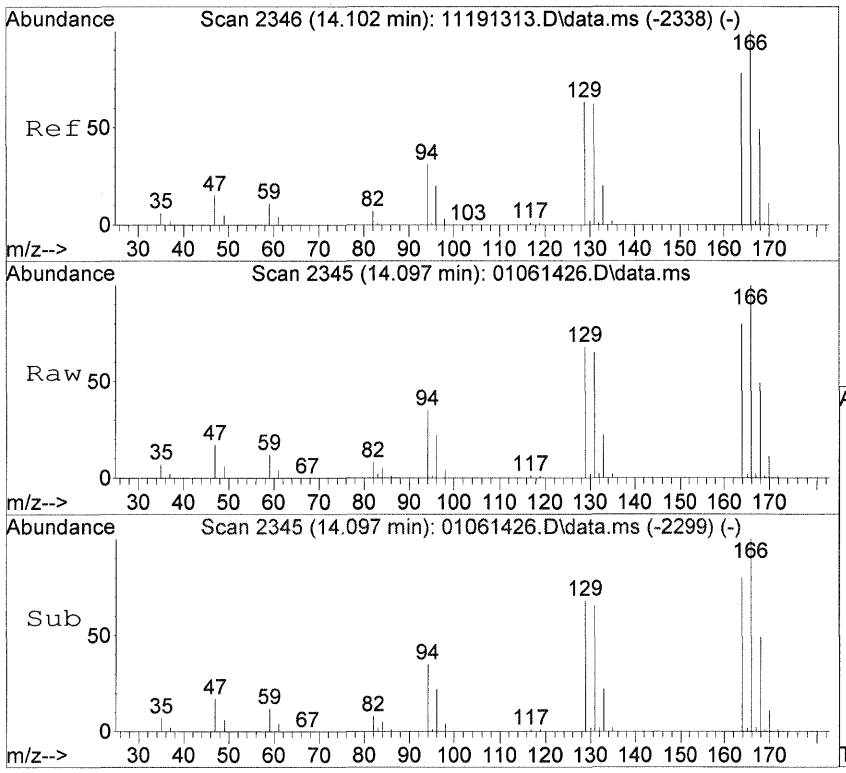


#47
Trichloroethene
Concen: 12.00 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion:130 Resp: 319386

Ion	Ratio	Lower	Upper
130	100		
132	98.1	76.5	116.5

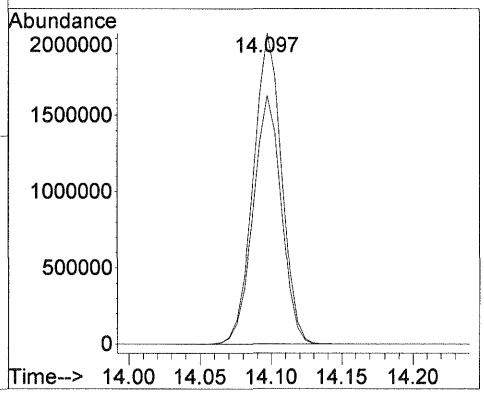




#64
Tetrachloroethene
Concen: 83.82 ng
RT: 14.10 min Scan# 2345
Delta R.T. 0.000 min
Lab File: 01061426.D
Acq: 6 Jan 2014 20:31

Tgt Ion:166 Resp: 2844496

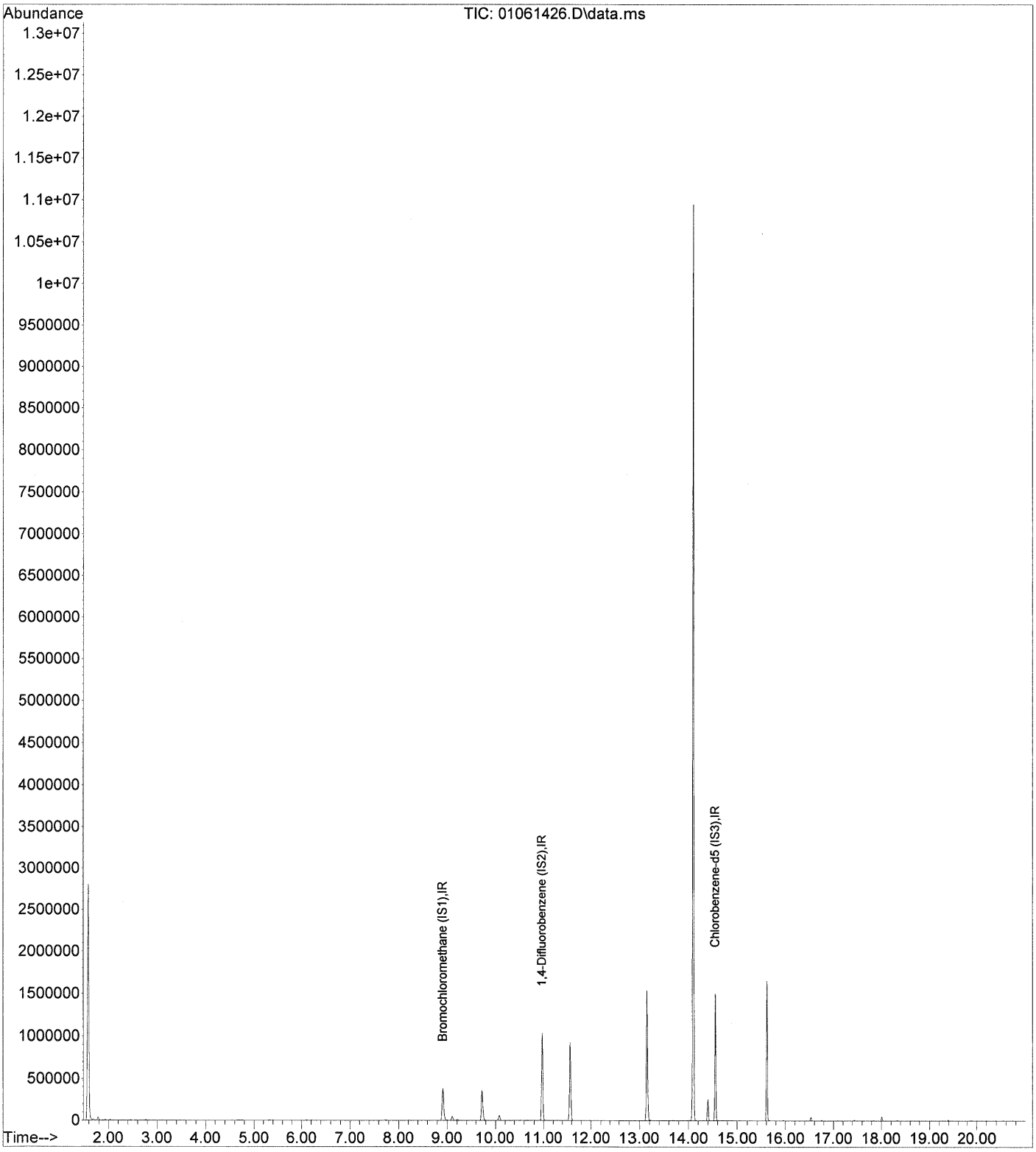
Ion	Ratio	Lower	Upper
166	100		
164	79.8	58.5	98.5



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061426.D
Acq On : 6 Jan 2014 20:31 Operator: WA
Sample : P1305675-006 (100mL)
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 08 14:45:35 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061426.D
Acq On : 6 Jan 2014 20:31 Operator: WA
Sample : P1305675-006 (100mL)
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 08 14:45:35 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.91	130	165367	12.500 ng	-0.02
16) 1,4-Difluorobenzene (IS2)	10.97	114	858828	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	376330	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	1.78	83	986	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	2.28	65	131	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	4.54	57	442	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.65	84	51	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.86	91	385	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	18.01	119	227	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

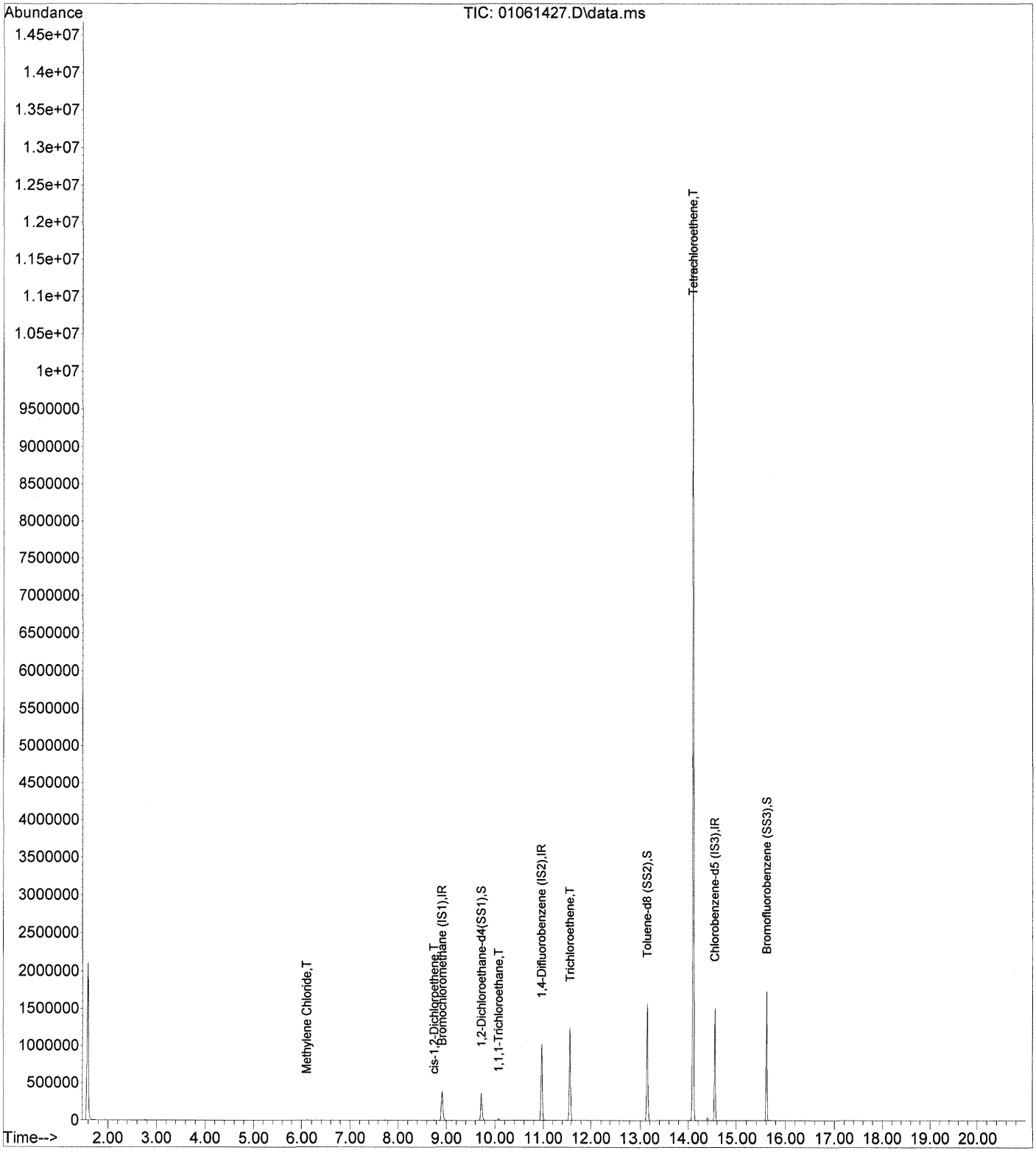
(#) = qualifier out of range (m) = manual integration (+) = signals summed

JSA 1/8/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061427.D
Acq On : 6 Jan 2014 21:00 Operator: WA
Sample : P1305675-007 (15mL)
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 08 14:20:28 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061427.D
Acq On : 6 Jan 2014 21:00 Operator: WA
Sample : P1305675-007 (15mL)
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 08 14:20:28 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	168397	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	867344	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	382096	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	269850	14.743 ng	0.00
Spiked Amount 12.500			Recovery	= 117.92%	
57) Toluene-d8 (SS2)	13.14	98	935498	11.493 ng	0.00
Spiked Amount 12.500			Recovery	= 91.92%	
73) Bromofluorobenzene (SS3)	15.61	174	417721	12.787 ng	0.00
Spiked Amount 12.500			Recovery	= 102.32%	

Target Compounds					Qvalue
2) Propene	1.93	42	520	N.D.	
3) Dichlorodifluoromethan...	2.05	85	864	N.D.	
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	0.00	54	0	N.D.	
8) Bromomethane	3.22	94	675	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	0.00	45	0	N.D.	
11) Acetonitrile	4.27	41	51	N.D.	
12) Acrolein	0.00	56	0	N.D.	
13) Acetone	0.00	58	0	N.D.	
14) Trichlorofluoromethane	0.00	101	0	N.D.	
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	2029	0.092 ng	88
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	
21) Trichlorotrifluoroethane	0.00	151	0	N.D.	
22) Carbon Disulfide	6.21	76	3841	N.D.	
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.	
24) 1,1-Dichloroethane	7.72	63	662	N.D.	
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	0.00	72	0	N.D.	
28) cis-1,2-Dichloroethene	8.76	61	2564	0.091 ng	99
29) Diisopropyl Ether	0.00	87	0	N.D.	
30) Ethyl Acetate	0.00	61	0	N.D.	
31) n-Hexane	0.00	57	0	N.D.	
32) Chloroform	9.10	83	2377	N.D.	
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	0.00	62	0	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	15889	0.476 ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.	
40) 1-Butanol	0.00	56	0	N.D.	
41) Benzene	10.52	78	3178	N.D.	
42) Carbon Tetrachloride	0.00	117	0	N.D.	
43) Cyclohexane	10.96	84	634	N.D.	
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

1/8/14

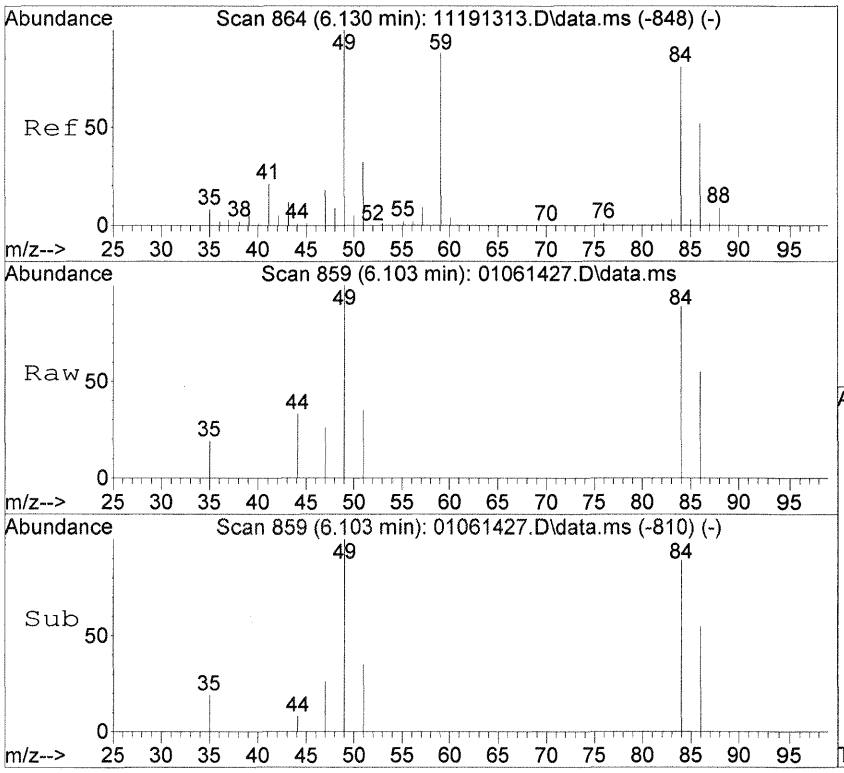
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061427.D
Acq On : 6 Jan 2014 21:00 Operator: WA
Sample : P1305675-007 (15mL)
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 08 14:20:28 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	0.00	83	0	N.D. d	
47) Trichloroethene	11.57	130	429541	15.980 ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	813	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.10	166	3205678	92.951 ng	98
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	14.86	91	214	N.D.	
67) m- & p-Xylenes	14.98	91	337	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.61	105	473	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	15.96	105	836	N.D.	
78) 4-Ethyltoluene	15.96	105	836	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	16.77	57	115	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	57	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

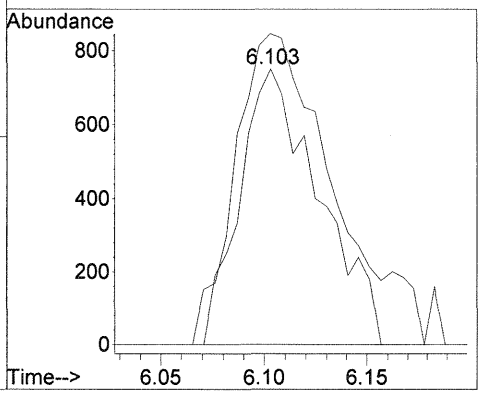
(#) = qualifier out of range (m) = manual integration (+) = signals summed

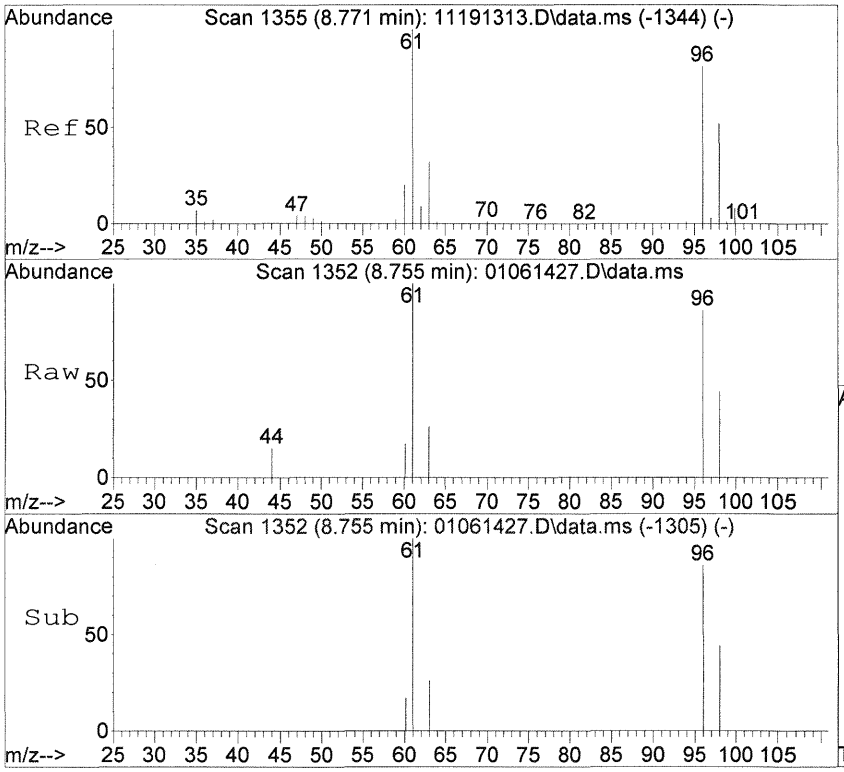


#19
Methylene Chloride
Concen: 0.09 ng
RT: 6.10 min Scan# 859
Delta R.T. 0.016 min
Lab File: 01061427.D
Acq: 6 Jan 2014 21:00

Tgt Ion: 84 Resp: 2029

Ion	Ratio	Lower	Upper
84	100		
49	139.2	101.0	151.0

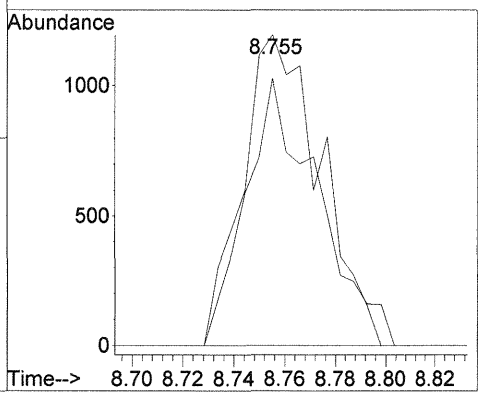


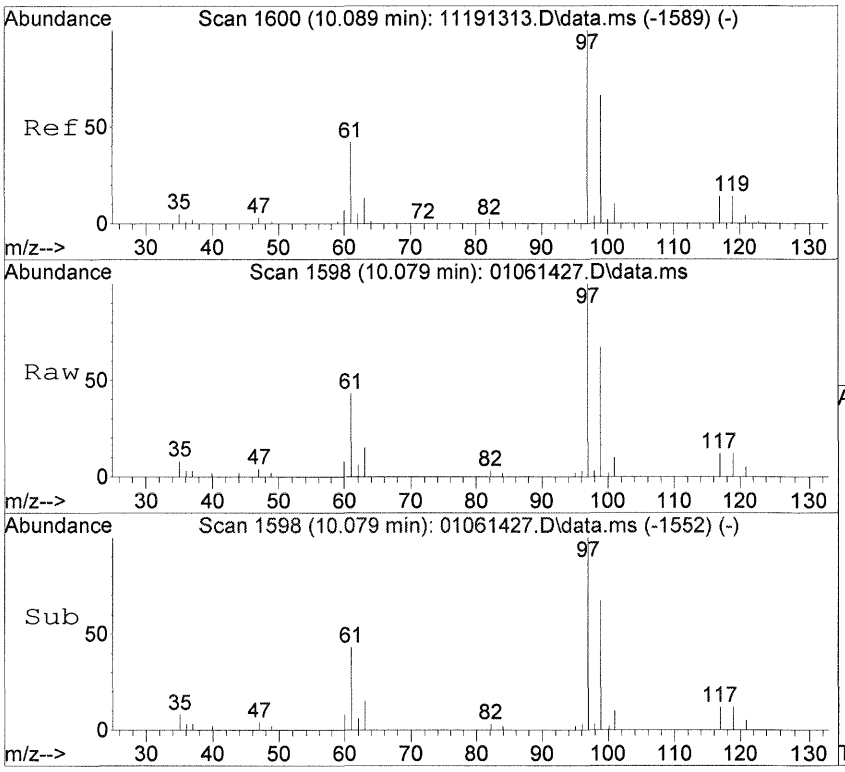


#28
cis-1,2-Dichloroethene
Concen: 0.09 ng
RT: 8.76 min Scan# 1352
Delta R.T. 0.000 min
Lab File: 01061427.D
Acq: 6 Jan 2014 21:00

Tgt Ion: 61 Resp: 2564

Ion	Ratio	Lower	Upper
61	100		
96	80.4	61.4	101.4

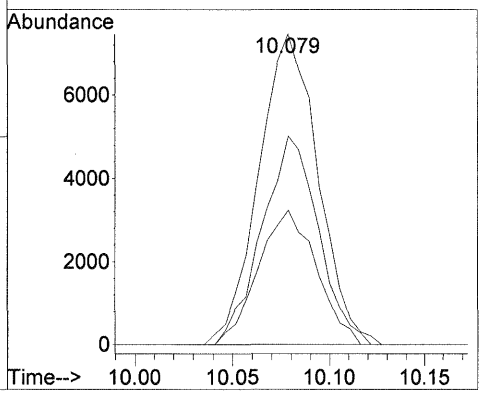


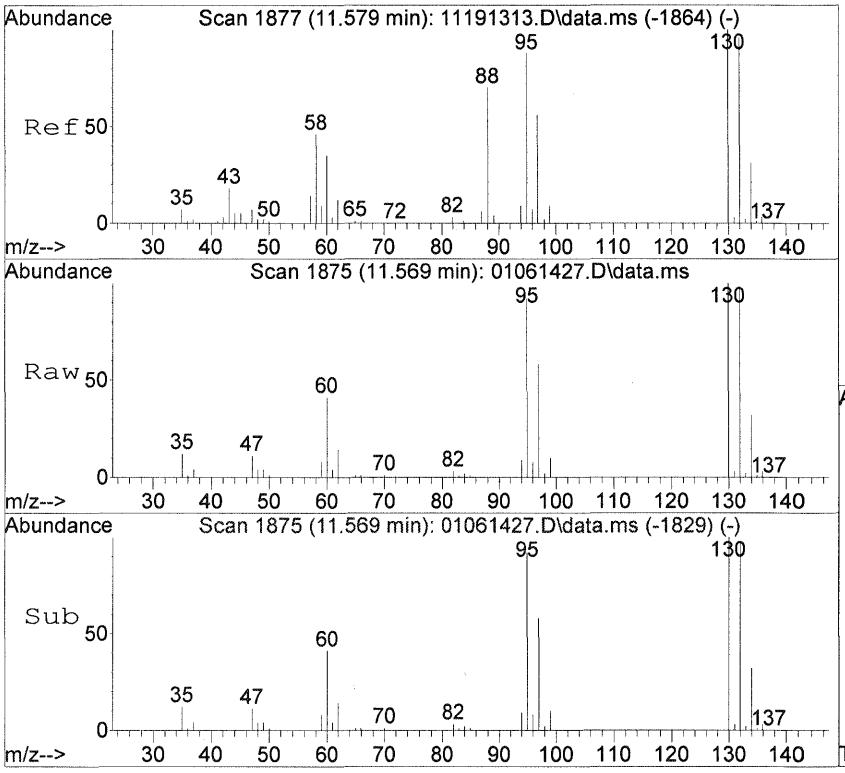


#38
1,1,1-Trichloroethane
Concen: 0.48 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061427.D
Acq: 6 Jan 2014 21:00

Tgt Ion: 97 Resp: 15889

Ion	Ratio	Lower	Upper
97	100		
99	63.9	44.8	84.8
61	42.7	20.9	60.9

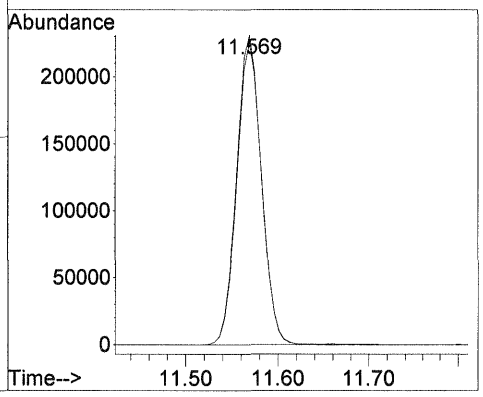


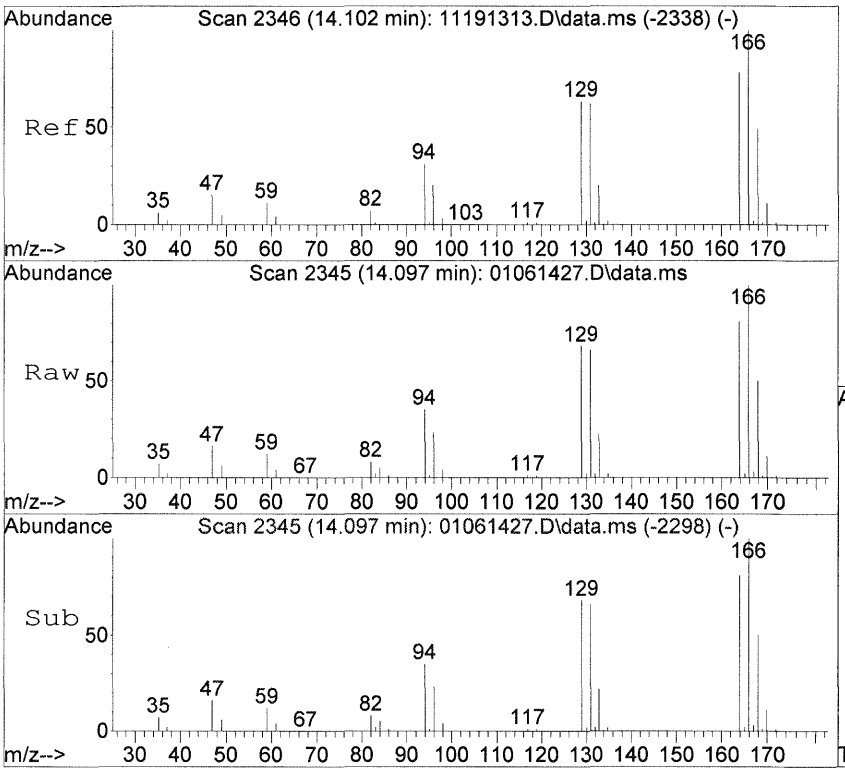


#47
Trichloroethene
Concen: 15.98 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061427.D
Acq: 6 Jan 2014 21:00

Tgt Ion:130 Resp: 429541

Ion	Ratio	Lower	Upper
130	100		
132	97.3	76.5	116.5

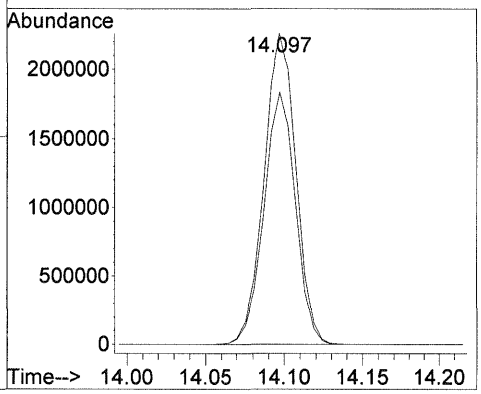




#64
Tetrachloroethene
Concen: 92.95 ng
RT: 14.10 min Scan# 2345
Delta R.T. 0.000 min
Lab File: 01061427.D
Acq: 6 Jan 2014 21:00

Tgt Ion:166 Resp: 3205678

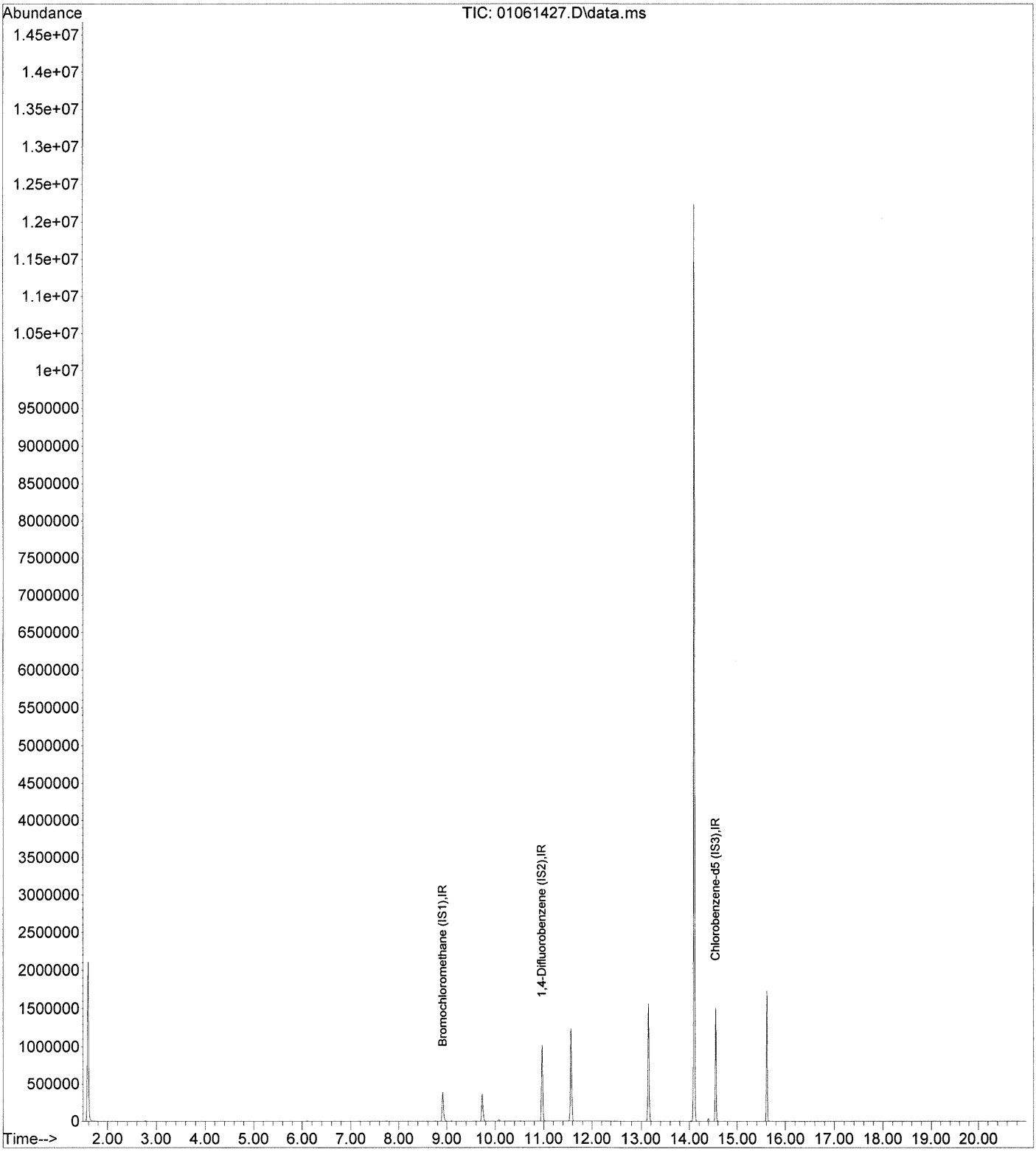
Ion	Ratio	Lower	Upper
166	100		
164	80.4	58.5	98.5



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061427.D
Acq On : 6 Jan 2014 21:00 Operator: WA
Sample : P1305675-007 (15mL)
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 08 14:45:52 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061427.D
Acq On : 6 Jan 2014 21:00 Operator: WA
Sample : P1305675-007 (15mL)
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 08 14:45:52 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	168400	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	868341	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	382448	12.500 ng	0.00

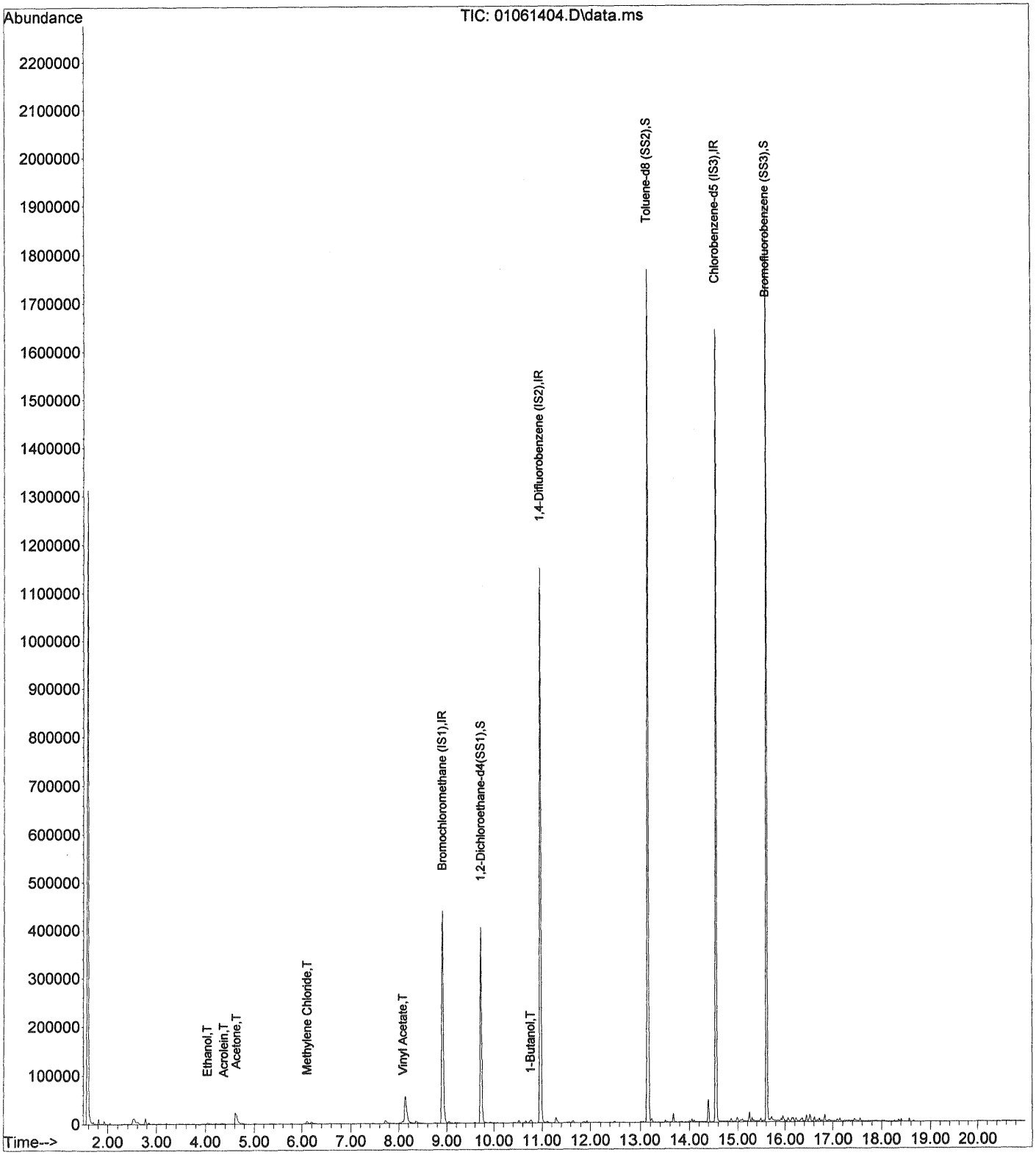
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.86	91	214	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

DA 1/8/14

Data File: I:\MS08\Data\2014_01\06\01061404.D
Acq On : 6 Jan 2014 8:58 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 06 09:36:31 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061404.D
Acq On : 6 Jan 2014 8:58 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 06 09:36:31 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	187600	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	968222	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	421692	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	297507	14.590 ng	0.00
Spiked Amount 12.500			Recovery	= 116.72%	
57) Toluene-d8 (SS2)	13.14	98	1050328	11.692 ng	0.00
Spiked Amount 12.500			Recovery	= 93.52%	
73) Bromofluorobenzene (SS3)	15.61	174	459180	12.736 ng	0.00
Spiked Amount 12.500			Recovery	= 101.92%	

Target Compounds					Qvalue
2) Propene	1.92	42	1688	N.D.	
3) Dichlorodifluoromethan...	2.05	85	1586	N.D.	
4) Chloromethane	2.27	50	753	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	695	N.D.	
6) Vinyl Chloride	2.61	62	878	N.D.	
7) 1,3-Butadiene	2.84	54	961	N.D.	
8) Bromomethane	3.21	94	1615	N.D.	
9) Chloroethane	3.53	64	509	N.D.	
10) Ethanol	4.04	45	4703	0.258 ng	92
11) Acetonitrile	4.23	41	1905	N.D.	
12) Acrolein	4.38	56	2268	0.148 ng	80
13) Acetone	4.63	58	18039	0.988 ng	85
14) Trichlorofluoromethane	4.76	101	1300	N.D.	
15) 2-Propanol (Isopropanol)	5.32	45	3763	N.D.	
16) Acrylonitrile	5.44	53	166	N.D.	
17) 1,1-Dichloroethene	5.77	96	142	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.10	84	3224	0.131 ng	97
20) 3-Chloro-1-propene (Al...	6.28	41	724	N.D.	
21) Trichlorotrifluoroethane	6.58	151	268	N.D.	
22) Carbon Disulfide	6.20	76	6950	N.D.	
23) trans-1,2-Dichloroethene	7.47	61	429	N.D.	
24) 1,1-Dichloroethane	7.71	63	1276	N.D.	
25) Methyl tert-Butyl Ether	7.97	73	50	N.D.	
26) Vinyl Acetate	8.09	86	1906	0.280 ng #	1
27) 2-Butanone (MEK)	8.37	72	1292	N.D.	
28) cis-1,2-Dichloroethene	8.76	61	748	N.D.	
29) Diisopropyl Ether	9.18	87	327	N.D.	
30) Ethyl Acetate	9.22	61	167	N.D.	
31) n-Hexane	9.05	57	1541	N.D.	
32) Chloroform	9.11	83	537	N.D.	
34) Tetrahydrofuran (THF)	9.59	72	323	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	9.84	62	701	N.D.	
38) 1,1,1-Trichloroethane	10.08	97	968	N.D.	
39) Isopropyl Acetate	10.66	61	668	N.D.	
40) 1-Butanol	10.77	56	4548	0.175 ng	99
41) Benzene	10.52	78	4839	N.D.	
42) Carbon Tetrachloride	10.66	117	511	N.D.	
43) Cyclohexane	10.77	84	2244	N.D.	
44) tert-Amyl Methyl Ether	11.22	73	100	N.D.	
45) 1,2-Dichloropropane	11.33	63	775	N.D.	

1/6/14

Data File: I:\MS08\Data\2014_01\06\01061404.D
Acq On : 6 Jan 2014 8:58 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 3 Sample Multiplier: 1

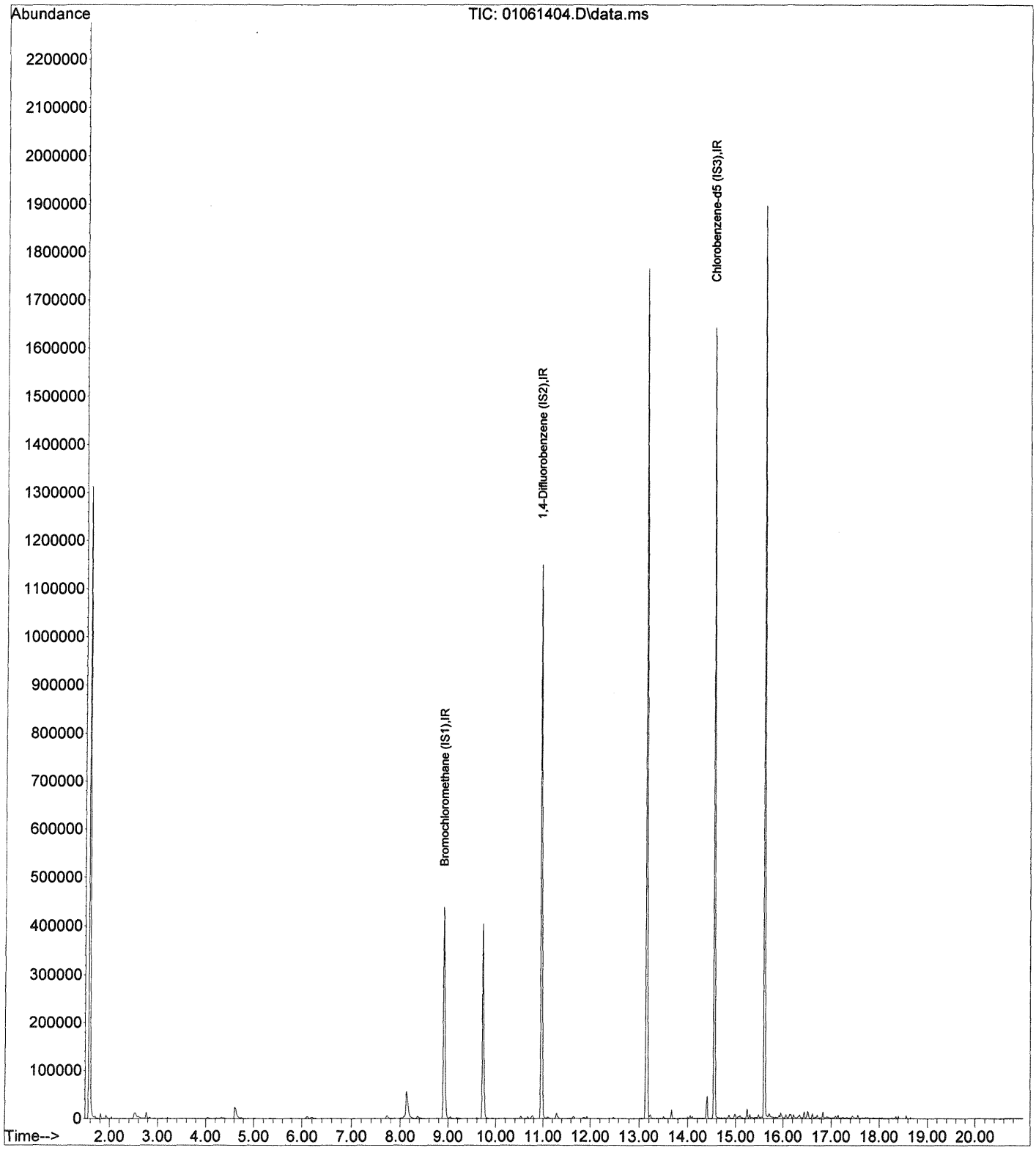
Quant Time: Jan 06 09:36:31 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	675	N.D.	
47) Trichloroethene	11.57	130	672	N.D.	
48) 1,4-Dioxane	11.65	88	500	N.D.	
49) 2,2,4-Trimethylpentane...	11.65	57	3492	N.D.	
50) Methyl Methacrylate	11.87	100	328	N.D.	
51) n-Heptane	11.92	71	845	N.D.	
52) cis-1,3-Dichloropropene	12.41	75	697	N.D.	
53) 4-Methyl-2-pentanone	12.49	58	551	N.D.	
54) trans-1,3-Dichloropropene	12.89	75	475	N.D.	
55) 1,1,2-Trichloroethane	13.01	97	451	N.D.	
58) Toluene	13.23	91	5227	N.D.	
59) 2-Hexanone	13.50	43	3017	N.D.	
60) Dibromochloromethane	13.55	129	439	N.D.	
61) 1,2-Dibromoethane	13.74	107	328	N.D.	
62) n-Butyl Acetate	14.00	43	1558	N.D.	
63) n-Octane	14.05	57	767	N.D.	
64) Tetrachloroethene	14.10	166	893	N.D.	
65) Chlorobenzene	14.58	112	1571	N.D.	
66) Ethylbenzene	14.86	91	4012	N.D.	
67) m- & p-Xylenes	14.98	91	5800	N.D.	
68) Bromoform	15.01	173	170	N.D.	
69) Styrene	15.24	104	1294	N.D.	
70) o-Xylene	15.30	91	2828	N.D.	
71) n-Nonane	15.48	43	2165	N.D.	
72) 1,1,2,2-Tetrachloroethane	15.30	83	938	N.D.	
74) Cumene	15.71	105	4089	N.D.	
75) alpha-Pinene	15.98	93	235	N.D.	
76) n-Propylbenzene	16.07	91	4514	N.D.	
77) 3-Ethyltoluene	16.14	105	3326	N.D.	
78) 4-Ethyltoluene	16.17	105	2801	N.D.	
79) 1,3,5-Trimethylbenzene	16.23	105	2657	N.D.	
80) alpha-Methylstyrene	16.33	118	1045	N.D.	
81) 2-Ethyltoluene	16.36	105	3885	N.D.	
82) 1,2,4-Trimethylbenzene	16.51	105	3138	N.D.	
83) n-Decane	16.61	57	2201	N.D.	
84) Benzyl Chloride	16.60	91	499	N.D.	
85) 1,3-Dichlorobenzene	16.61	146	1067	N.D.	
86) 1,4-Dichlorobenzene	16.67	146	947	N.D.	
87) sec-Butylbenzene	16.71	105	3624	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	5516	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	2932	N.D.	
90) 1,2-Dichlorobenzene	16.92	146	1184	N.D.	
91) d-Limonene	16.93	68	175	N.D.	
92) 1,2-Dibromo-3-Chloropr...	17.24	157	228	N.D.	
93) n-Undecane	17.56	57	1750	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	1287	N.D.	
95) Naphthalene	18.35	128	3652	N.D.	
96) n-Dodecane	18.41	57	1342	N.D.	
97) Hexachlorobutadiene	18.66	225	745	N.D.	
98) Cyclohexanone	15.09	55	1433	N.D.	
99) tert-Butylbenzene	16.51	119	3675	N.D.	
100) n-Butylbenzene	17.14	91	3003	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\06\01061404.D
Acq On : 6 Jan 2014 8:58 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 06 09:39:22 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061404.D
Acq On : 6 Jan 2014 8:58 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 06 09:39:22 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	188622	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	968368	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	421702	12.500 ng	0.00

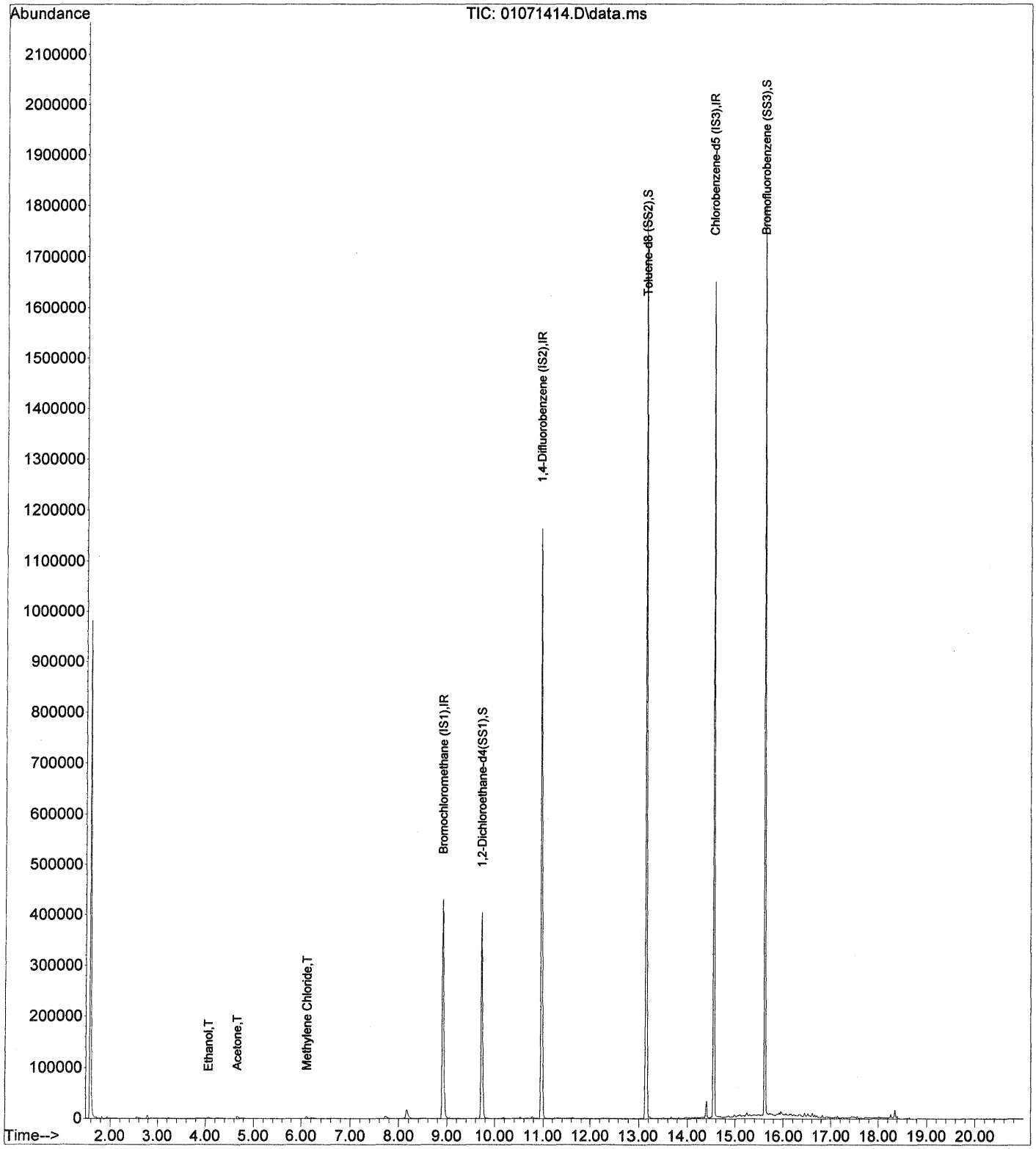
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	6.19	43	108	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	12.68	55	307	N.D.	
21) 1,3-Dichloropropane	13.14	76	10622	N.D.	
22) 1,1,1,2-Tetrachloroethane	14.49	131	50	N.D.	
23) 1-Chlorohexane	14.75	91	135	N.D.	
24) 1,2,3-Trichloropropane	15.38	75	49	N.D.	
25) Bromobenzene	15.75	77	324	N.D.	
26) 2-Chlorotoluene	16.02	91	73	N.D.	
27) 4-Chlorotoluene	16.07	91	4477	N.D.	
28) Indan	16.96	117	421	N.D.	
29) Indene	17.03	115	417	N.D.	
30) 1,2,4,5-Tetramethylben...	17.72	119	517	N.D.	
31) 1,2,3,4-Tetramethylben...	17.76	119	831	N.D.	
32) 1,2,3,5-Tetramethylben...	18.06	119	732	N.D.	
33) 1,2,3-Trichlorobenzene	18.57	180	2233	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

DM 1/6/14

Data File: I:\MS08\Data\2014_01\07\01071414.D
Acq On : 7 Jan 2014 8:04 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 07 10:39:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071414.D
Acq On : 7 Jan 2014 8:04 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 07 10:39:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	188895	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	967571	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	413595	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	298330	14.530 ng	0.00
Spiked Amount 12.500			Recovery	= 116.24%	
57) Toluene-d8 (SS2)	13.14	98	1049354	11.910 ng	0.00
Spiked Amount 12.500			Recovery	= 95.28%	
73) Bromofluorobenzene (SS3)	15.61	174	449392	12.709 ng	0.00
Spiked Amount 12.500			Recovery	= 101.68%	

Target Compounds					Qvalue
2) Propene	1.94	42	877	N.D.	
3) Dichlorodifluoromethan...	2.06	85	348	N.D.	
4) Chloromethane	0.00	50	0	N.D.	
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	2.85	54	109	N.D.	
8) Bromomethane	3.23	94	1301	N.D.	
9) Chloroethane	0.00	64	0	N.D.	
10) Ethanol	4.06	45	3881	0.212 ng	78
11) Acetonitrile	4.25	41	1872	N.D.	
12) Acrolein	4.41	56	411	N.D.	
13) Acetone	4.66	58	3271	0.178 ng #	84
14) Trichlorofluoromethane	4.77	101	198	N.D.	
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	
16) Acrylonitrile	0.00	53	0	N.D.	
17) 1,1-Dichloroethene	0.00	96	0	N.D.	
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	
19) Methylene Chloride	6.11	84	2872	0.116 ng	96
20) 3-Chloro-1-propene (Al...	6.27	41	219	N.D.	
21) Trichlorotrifluoroethane	0.00	151	0	N.D.	
22) Carbon Disulfide	6.21	76	4946	N.D.	
23) trans-1,2-Dichloroethene	7.47	61	163	N.D.	
24) 1,1-Dichloroethane	7.72	63	226	N.D.	
25) Methyl tert-Butyl Ether	8.01	73	49	N.D.	
26) Vinyl Acetate	0.00	86	0	N.D.	
27) 2-Butanone (MEK)	8.42	72	171	N.D.	
28) cis-1,2-Dichloroethene	8.76	61	121	N.D.	
29) Diisopropyl Ether	0.00	87	0	N.D.	
30) Ethyl Acetate	0.00	61	0	N.D.	
31) n-Hexane	9.05	57	479	N.D.	
32) Chloroform	9.10	83	376	N.D.	
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.	
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.	
36) 1,2-Dichloroethane	9.85	62	237	N.D.	
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
39) Isopropyl Acetate	10.66	61	110	N.D.	
40) 1-Butanol	10.77	56	2031	N.D.	
41) Benzene	10.52	78	2541	N.D.	
42) Carbon Tetrachloride	0.00	117	0	N.D.	
43) Cyclohexane	10.77	84	690	N.D.	
44) tert-Amyl Methyl Ether	11.22	73	62	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	

Data File: I:\MS08\Data\2014_01\07\01071414.D
Acq On : 7 Jan 2014 8:04 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 4 Sample Multiplier: 1

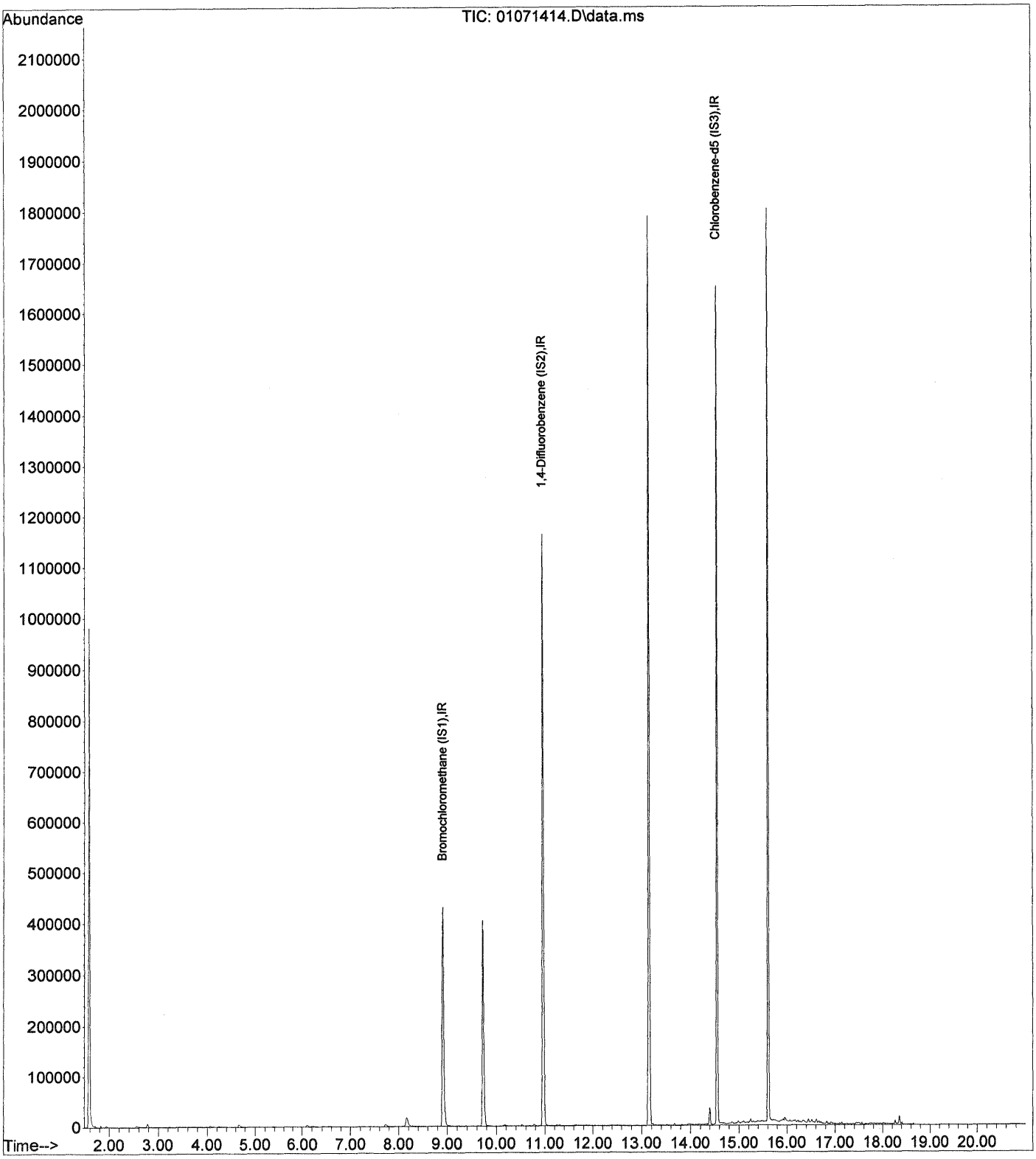
Quant Time: Jan 07 10:39:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	172	N.D.	
47) Trichloroethene	11.57	130	158	N.D.	
48) 1,4-Dioxane	11.65	88	123	N.D.	
49) 2,2,4-Trimethylpentane...	11.64	57	749	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	12.41	75	290	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	12.89	75	442	N.D.	
55) 1,1,2-Trichloroethane	13.00	97	103	N.D.	
58) Toluene	13.23	91	2003	N.D.	
59) 2-Hexanone	13.52	43	1783	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	13.73	107	221	N.D.	
62) n-Butyl Acetate	14.00	43	945	N.D.	
63) n-Octane	14.05	57	200	N.D.	
64) Tetrachloroethene	14.10	166	315	N.D.	
65) Chlorobenzene	14.59	112	1065	N.D.	
66) Ethylbenzene	14.86	91	1764	N.D.	
67) m- & p-Xylenes	14.99	91	3315	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.23	104	1164	N.D.	
70) o-Xylene	15.31	91	1478	N.D.	
71) n-Nonane	15.49	43	629	N.D.	
72) 1,1,2,2-Tetrachloroethane	15.30	83	370	N.D.	
74) Cumene	15.71	105	1275	N.D.	
75) alpha-Pinene	15.95	93	1469	N.D.	
76) n-Propylbenzene	16.07	91	2229	N.D.	
77) 3-Ethyltoluene	16.15	105	1530	N.D.	
78) 4-Ethyltoluene	16.17	105	1354	N.D.	
79) 1,3,5-Trimethylbenzene	16.23	105	1460	N.D.	
80) alpha-Methylstyrene	16.33	118	686	N.D.	
81) 2-Ethyltoluene	16.35	105	1939	N.D.	
82) 1,2,4-Trimethylbenzene	16.52	105	2037	N.D.	
83) n-Decane	16.60	57	1449	N.D.	
84) Benzyl Chloride	16.60	91	1121	N.D.	
85) 1,3-Dichlorobenzene	16.61	146	1498	N.D.	
86) 1,4-Dichlorobenzene	16.66	146	1496	N.D.	
87) sec-Butylbenzene	16.71	105	2449	N.D.	
88) 4-Isopropyltoluene (p-...	16.83	119	2072	N.D.	
89) 1,2,3-Trimethylbenzene	16.82	105	1733	N.D.	
90) 1,2-Dichlorobenzene	16.92	146	1043	N.D.	
91) d-Limonene	16.93	68	274	N.D.	
92) 1,2-Dibromo-3-Chloropr...	17.24	157	332	N.D.	
93) n-Undecane	17.56	57	1170	N.D.	
94) 1,2,4-Trichlorobenzene	18.27	180	2305	N.D.	
95) Naphthalene	18.35	128	11078	N.D.	
96) n-Dodecane	18.41	57	1319	N.D.	
97) Hexachlorobutadiene	18.65	225	666	N.D.	
98) Cyclohexanone	15.10	55	915	N.D.	
99) tert-Butylbenzene	16.51	119	1808	N.D.	
100) n-Butylbenzene	17.14	91	1720	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\07\01071414.D
Acq On : 7 Jan 2014 8:04 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 08 06:24:32 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071414.D
Acq On : 7 Jan 2014 8:04 Operator: WA
Sample : TO-15 Method Blank (1000mL)
Misc : S29-12131301
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 08 06:24:32 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	189894	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	968584	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	414234	12.500 ng	0.00

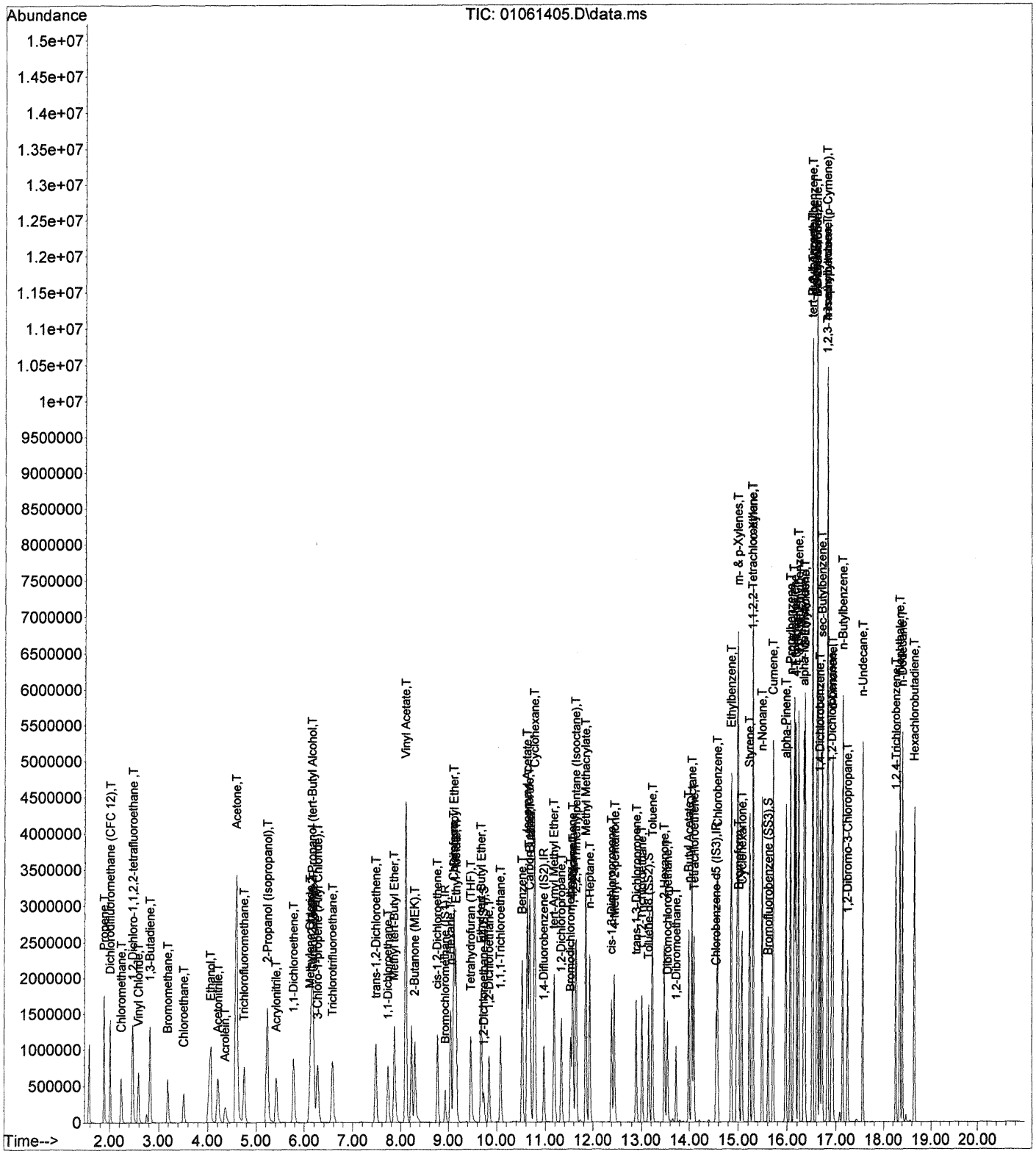
Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	0.00	83	0	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	0.00	65	0	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	0.00	84	0	N.D.	
17) 2,3-Dimethylpentane	11.21	56	50	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	13.14	76	11162	N.D.	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.77	91	309	N.D.	
24) 1,2,3-Trichloropropane	15.40	75	100	N.D.	
25) Bromobenzene	15.74	77	950	N.D.	
26) 2-Chlorotoluene	16.07	91	2947	N.D.	
27) 4-Chlorotoluene	16.07	91	2947	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	17.74	119	67	N.D.	
31) 1,2,3,4-Tetramethylben...	17.76	119	53	N.D.	
32) 1,2,3,5-Tetramethylben...	0.00	119	0	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MA 1/8/14

Data File: I:\MS08\Data\2014_01\06\01061405.D
Acq On : 6 Jan 2014 9:27 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 06:41:48 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061405.D
Acq On : 6 Jan 2014 9:27 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 06:41:48 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	179373	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	887199	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	385854	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	280792	14.402	ng		0.00
Spiked Amount 12.500			Recovery = 115.20%				
57) Toluene-d8 (SS2)	13.15	98	954539	11.613	ng		0.00
Spiked Amount 12.500			Recovery = 92.88%				
73) Bromofluorobenzene (SS3)	15.61	174	422214	12.798	ng		0.00
Spiked Amount 12.500			Recovery = 102.40%				
Target Compounds							Qvalue
2) Propene	1.89	42	525628	20.773	ng		95
3) Dichlorodifluoromethan...	2.01	85	1072589	25.063	ng		100
4) Chloromethane	2.24	50	722966	20.527	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	568245	21.883	ng		99
6) Vinyl Chloride	2.59	62	745519	21.254	ng		100
7) 1,3-Butadiene	2.82	54	662725	24.126	ng		97
8) Bromomethane	3.19	94	462719	21.363	ng		100
9) Chloroethane	3.52	64	405061	20.723	ng		100
10) Ethanol	4.06	45	2031980	116.668	ng		100
11) Acetonitrile	4.21	41	985904	20.580	ng		98
12) Acrolein	4.36	56	334379	22.847	ng		100
13) Acetone	4.60	58	2155726	123.519	ng	#	84
14) Trichlorofluoromethane	4.75	101	900556	22.729	ng		100
15) 2-Propanol (Isopropanol)	5.24	45	2998381	47.253	ng		96
16) Acrylonitrile	5.41	53	709940	23.688	ng		98
17) 1,1-Dichloroethene	5.78	96	518738	23.047	ng		94
18) 2-Methyl-2-Propanol (t...	6.16	59	3014305	48.470	ng		97
19) Methylene Chloride	6.12	84	534181	22.650	ng		98
20) 3-Chloro-1-propene (Al...	6.28	41	843889	21.577	ng		94
21) Trichlorotrifluoroethane	6.58	151	476196	22.830	ng		96
22) Carbon Disulfide	6.19	76	1896776	22.769	ng		100
23) trans-1,2-Dichloroethene	7.48	61	787215	24.516	ng		99
24) 1,1-Dichloroethane	7.73	63	935088	22.985	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1711980	24.838	ng		99
26) Vinyl Acetate	8.11	86	846674	130.073	ng	#	95
27) 2-Butanone (MEK)	8.30	72	388721	23.539	ng		99
28) cis-1,2-Dichloroethene	8.77	61	749652	24.899	ng		98
29) Diisopropyl Ether	9.13	87	576543	27.290	ng	#	99
30) Ethyl Acetate	9.16	61	400652	48.443	ng		100
31) n-Hexane	9.05	57	799018	23.934	ng		100
32) Chloroform	9.12	83	954361	25.083	ng		99
34) Tetrahydrofuran (THF)	9.47	72	355817	23.742	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	735161	24.550	ng		99
36) 1,2-Dichloroethane	9.85	62	736047	26.410	ng		100
38) 1,1,1-Trichloroethane	10.08	97	841619	24.636	ng		98
39) Isopropyl Acetate	10.63	61	713705	49.871	ng	#	93
40) 1-Butanol	10.69	56	1370125	57.391	ng		99
41) Benzene	10.53	78	2051474	24.366	ng		100
42) Carbon Tetrachloride	10.67	117	761861	26.209	ng		99
43) Cyclohexane	10.78	84	1847843	48.459	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1700392	24.109	ng		99
45) 1,2-Dichloropropane	11.34	63	526453	22.677	ng		100

DH 1/7/14

Data File: I:\MS08\Data\2014_01\06\01061405.D
Acq On : 6 Jan 2014 9:27 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 06:41:48 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

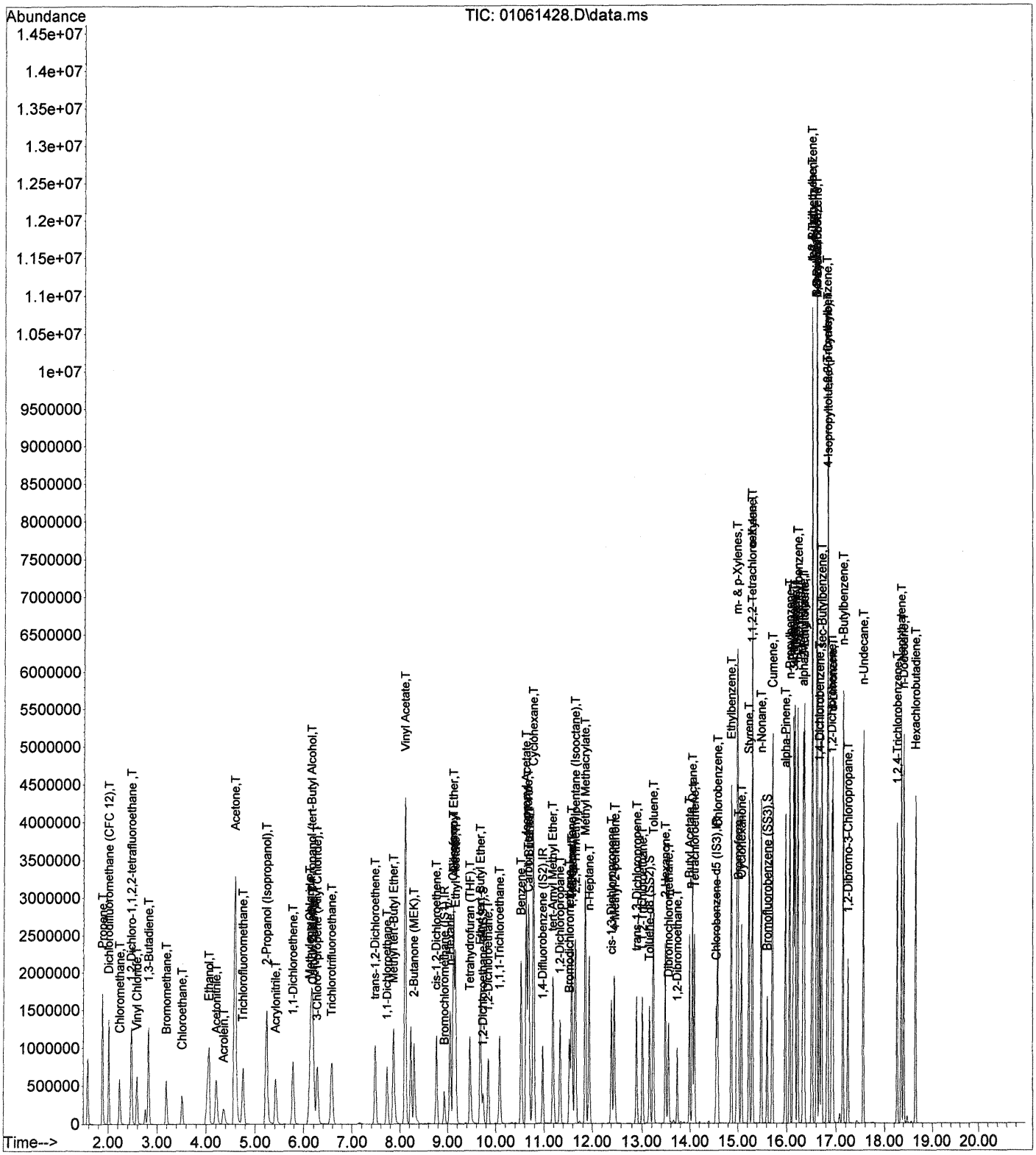
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.53	83	773610	26.650	ng	100
47) Trichloroethene	11.57	130	627927	22.837	ng	100
48) 1,4-Dioxane	11.58	88	495089	25.766	ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	2410833	22.027	ng	94
50) Methyl Methacrylate	11.85	100	523325	47.375	ng	92
51) n-Heptane	11.93	71	565406	22.942	ng	100
52) cis-1,3-Dichloropropene	12.40	75	945444	26.468	ng	100
53) 4-Methyl-2-pentanone	12.46	58	558575	23.846	ng	96
54) trans-1,3-Dichloropropene	12.89	75	854377	26.623	ng	100
55) 1,1,2-Trichloroethane	13.01	97	539436	24.333	ng	99
58) Toluene	13.23	91	2266874	21.162	ng	99
59) 2-Hexanone	13.48	43	1432605	24.099	ng	97
60) Dibromochloromethane	13.55	129	674030	24.512	ng	100
61) 1,2-Dibromoethane	13.73	107	628063	22.725	ng	100
62) n-Butyl Acetate	13.99	43	1549855	23.397	ng	98
63) n-Octane	14.05	57	500279	21.131	ng	100
64) Tetrachloroethene	14.10	166	696204	19.990	ng	100
65) Chlorobenzene	14.58	112	1571607	22.201	ng	100
66) Ethylbenzene	14.86	91	2710517	22.801	ng	98
67) m- & p-Xylenes	15.00	91	4511726	47.916	ng	98
68) Bromoform	15.01	173	657604	25.926	ng	99
69) Styrene	15.23	104	1759848	23.226	ng	99
70) o-Xylene	15.30	91	2293398	23.315	ng	98
71) n-Nonane	15.49	43	1222155	21.204	ng	99
72) 1,1,2,2-Tetrachloroethane	15.30	83	1073014	24.468	ng	99
74) Cumene	15.72	105	2857076	22.103	ng	99
75) alpha-Pinene	15.97	93	1428610	21.880	ng	96
76) n-Propylbenzene	16.07	91	3370703	22.703	ng	98
77) 3-Ethyltoluene	16.14	105	3047533	24.162	ng	99
78) 4-Ethyltoluene	16.17	105	2644208	23.371	ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2406806	23.864	ng	98
80) alpha-Methylstyrene	16.33	118	1291583	22.563	ng	98
81) 2-Ethyltoluene	16.36	105	2844338	23.947	ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2592168	25.074	ng	98
83) n-Decane	16.61	57	1389325	24.695	ng	99
84) Benzyl Chloride	16.61	91	2367375	29.991	ng	97
85) 1,3-Dichlorobenzene	16.61	146	1596857	26.008	ng	99
86) 1,4-Dichlorobenzene	16.67	146	1472779	23.211	ng	100
87) sec-Butylbenzene	16.71	105	3243848	24.547	ng	98
88) 4-Isopropyltoluene (p-...	16.83	119	3165230	23.926	ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2683622	25.747	ng	98
90) 1,2-Dichlorobenzene	16.92	146	1404537	23.850	ng	100
91) d-Limonene	16.94	68	926373	23.153	ng	99
92) 1,2-Dibromo-3-Chloropr...	17.24	157	540121	24.994	ng	89
93) n-Undecane	17.56	57	1323310	22.512	ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1108955	23.579	ng	99
95) Naphthalene	18.35	128	3449160	24.831	ng	100
96) n-Dodecane	18.41	57	1266749	21.841	ng	100
97) Hexachlorobutadiene	18.65	225	697835	23.403	ng	98
98) Cyclohexanone	15.08	55	861062	23.105	ng	97
99) tert-Butylbenzene	16.51	119	2582162	24.944	ng	100
100) n-Butylbenzene	17.15	91	2579396	25.380	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061428.D
Acq On : 6 Jan 2014 21:30 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 06:39:38 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061428.D
Acq On : 6 Jan 2014 21:30 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 06:39:38 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	171198	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	855461	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	373964	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	271360	14.583	ng		0.00
Spiked Amount 12.500			Recovery	=	116.64%		
57) Toluene-d8 (SS2)	13.15	98	918201	11.526	ng		0.00
Spiked Amount 12.500			Recovery	=	92.24%		
73) Bromofluorobenzene (SS3)	15.61	174	416407	13.024	ng		0.00
Spiked Amount 12.500			Recovery	=	104.16%		
Target Compounds							Qvalue
2) Propene	1.88	42	505445	20.929	ng		95
3) Dichlorodifluoromethan...	2.01	85	1018073	24.925	ng		100
4) Chloromethane	2.24	50	669837	19.926	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	2.47	135	535310	21.599	ng		100
6) Vinyl Chloride	2.58	62	696375	20.801	ng		100
7) 1,3-Butadiene	2.82	54	620626	23.672	ng		97
8) Bromomethane	3.19	94	431330	20.865	ng		100
9) Chloroethane	3.52	64	378303	20.279	ng		99
10) Ethanol	4.06	45	1899701	114.281	ng		100
11) Acetonitrile	4.21	41	919494	20.111	ng		98
12) Acrolein	4.36	56	310923	22.259	ng		100
13) Acetone	4.59	58	2047491	122.919	ng	#	83
14) Trichlorofluoromethane	4.75	101	855913	22.634	ng		99
15) 2-Propanol (Isopropanol)	5.23	45	2816435	46.505	ng		95
16) Acrylonitrile	5.41	53	674489	23.580	ng		99
17) 1,1-Dichloroethene	5.77	96	488463	22.739	ng		93
18) 2-Methyl-2-Propanol (t...	6.16	59	2772108	46.704	ng		97
19) Methylene Chloride	6.12	84	503934	22.388	ng		96
20) 3-Chloro-1-propene (Al...	6.27	41	793143	21.248	ng		96
21) Trichlorotrifluoroethane	6.58	151	457672	22.990	ng		97
22) Carbon Disulfide	6.19	76	1791966	22.538	ng		100
23) trans-1,2-Dichloroethene	7.47	61	749742	24.464	ng		99
24) 1,1-Dichloroethane	7.73	63	895854	23.072	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1615733	24.561	ng		99
26) Vinyl Acetate	8.11	86	802070	129.104	ng	#	93
27) 2-Butanone (MEK)	8.30	72	369149	23.421	ng		98
28) cis-1,2-Dichloroethene	8.77	61	711256	24.752	ng		98
29) Diisopropyl Ether	9.13	87	547100	27.133	ng	#	99
30) Ethyl Acetate	9.16	61	379126	48.029	ng		98
31) n-Hexane	9.05	57	754444	23.678	ng		99
32) Chloroform	9.12	83	906013	24.949	ng		100
34) Tetrahydrofuran (THF)	9.47	72	339647	23.745	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	697308	24.398	ng		98
36) 1,2-Dichloroethane	9.85	62	709191	26.662	ng		99
38) 1,1,1-Trichloroethane	10.08	97	799540	24.273	ng		98
39) Isopropyl Acetate	10.63	61	675748	48.970	ng	#	91
40) 1-Butanol	10.69	56	1295901	56.296	ng		99
41) Benzene	10.53	78	1948722	24.004	ng		100
42) Carbon Tetrachloride	10.67	117	718975	25.652	ng		99
43) Cyclohexane	10.78	84	1746204	47.492	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1613141	23.721	ng		98
45) 1,2-Dichloropropane	11.34	63	499953	22.334	ng		100

1/7/14

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061428.D
Acq On : 6 Jan 2014 21:30 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

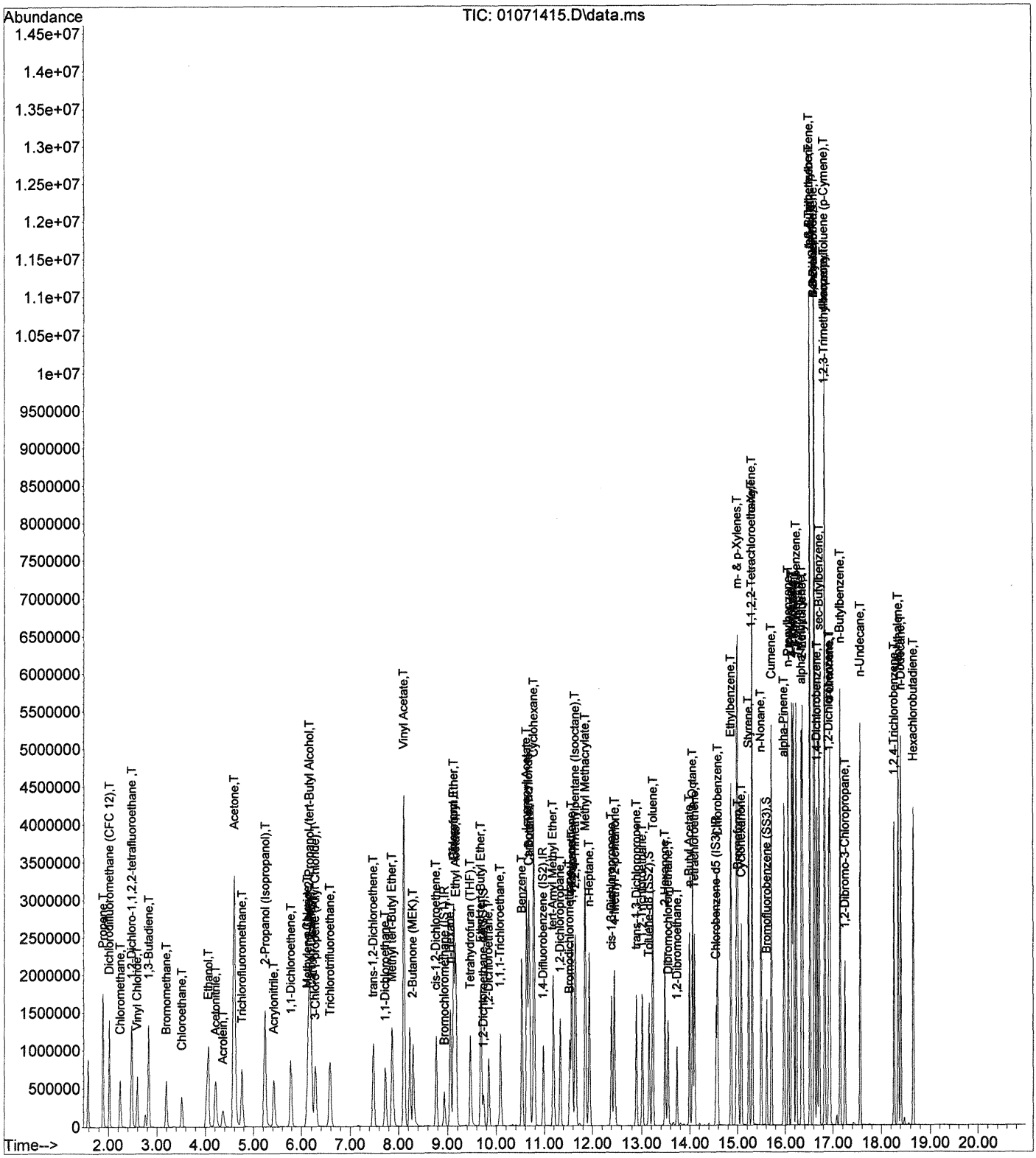
Quant Time: Jan 07 06:39:38 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.53	83	728917	26.042	ng	99
47) Trichloroethene	11.57	130	592927	22.364	ng	99
48) 1,4-Dioxane	11.58	88	469593	25.346	ng	100
49) 2,2,4-Trimethylpentane...	11.65	57	2306059	21.852	ng	93
50) Methyl Methacrylate	11.85	100	496464	46.610	ng	93
51) n-Heptane	11.93	71	539631	22.709	ng	99
52) cis-1,3-Dichloropropene	12.40	75	898896	26.098	ng	100
53) 4-Methyl-2-pentanone	12.46	58	531697	23.540	ng	96
54) trans-1,3-Dichloropropene	12.89	75	816522	26.387	ng	100
55) 1,1,2-Trichloroethane	13.01	97	510171	23.867	ng	99
58) Toluene	13.23	91	2155805	20.765	ng	99
59) 2-Hexanone	13.48	43	1378361	23.924	ng	97
60) Dibromochloromethane	13.55	129	636637	23.888	ng	100
61) 1,2-Dibromoethane	13.73	107	594550	22.196	ng	100
62) n-Butyl Acetate	13.99	43	1490237	23.213	ng	98
63) n-Octane	14.05	57	478774	20.865	ng	100
64) Tetrachloroethene	14.10	166	658753	19.516	ng	99
65) Chlorobenzene	14.58	112	1503140	21.909	ng	100
66) Ethylbenzene	14.86	91	2577553	22.372	ng	98
67) m- & p-Xylenes	14.99	91	4277818	46.877	ng	98
68) Bromoform	15.01	173	624512	25.404	ng	100
69) Styrene	15.23	104	1688366	22.991	ng	99
70) o-Xylene	15.30	91	2183532	22.904	ng	98
71) n-Nonane	15.49	43	1175882	21.050	ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1025915	24.138	ng	100
74) Cumene	15.72	105	2726135	21.760	ng	99
75) alpha-Pinene	15.98	93	1369969	21.649	ng	96
76) n-Propylbenzene	16.07	91	3204129	22.267	ng	98
77) 3-Ethyltoluene	16.14	105	2850510	23.319	ng	99
78) 4-Ethyltoluene	16.17	105	2583726	23.563	ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2284249	23.368	ng	98
80) alpha-Methylstyrene	16.33	118	1225221	22.084	ng	98
81) 2-Ethyltoluene	16.36	105	2695481	23.415	ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2480405	24.756	ng	97
83) n-Decane	16.61	57	1351873	24.793	ng	100
84) Benzyl Chloride	16.61	91	2226711	29.106	ng	98
85) 1,3-Dichlorobenzene	16.61	146	1522433	25.585	ng	99
86) 1,4-Dichlorobenzene	16.67	146	1406887	22.877	ng	100
87) sec-Butylbenzene	16.71	105	3081300	24.058	ng	98
88) 4-Isopropyltoluene (p-...	16.84	119	3022639	23.575	ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2553617	25.278	ng	98
90) 1,2-Dichlorobenzene	16.92	146	1339306	23.465	ng	99
91) d-Limonene	16.94	68	887962	22.899	ng	99
92) 1,2-Dibromo-3-Chloropr...	17.24	157	517123	24.691	ng	88
93) n-Undecane	17.56	57	1279774	22.464	ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1063820	23.339	ng	100
95) Naphthalene	18.35	128	3305034	24.549	ng	100
96) n-Dodecane	18.41	57	1234288	21.958	ng	100
97) Hexachlorobutadiene	18.65	225	667175	23.086	ng	99
98) Cyclohexanone	15.08	55	822048	22.760	ng	96
99) tert-Butylbenzene	16.52	119	2460298	24.523	ng	100
100) n-Butylbenzene	17.15	91	2473852	25.116	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\07\01071415.D
Acq On : 7 Jan 2014 8:33 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 15:10:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071415.D
Acq On : 7 Jan 2014 8:33 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 15:10:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	181492	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	892325	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	386149	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	277245	14.054	ng		0.00
Spiked Amount 12.500			Recovery = 112.40%				
57) Toluene-d8 (SS2)	13.15	98	959979	11.670	ng		0.00
Spiked Amount 12.500			Recovery = 93.36%				
73) Bromofluorobenzene (SS3)	15.61	174	417758	12.654	ng		0.00
Spiked Amount 12.500			Recovery = 101.20%				
Target Compounds							Qvalue
2) Propene	1.89	42	512998	20.037	ng		95
3) Dichlorodifluoromethan...	2.01	85	1044318	24.118	ng		100
4) Chloromethane	2.24	50	699741	19.635	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	565853	21.536	ng		99
6) Vinyl Chloride	2.59	62	730605	20.586	ng		100
7) 1,3-Butadiene	2.83	54	653531	23.513	ng		97
8) Bromomethane	3.20	94	456059	20.810	ng		100
9) Chloroethane	3.52	64	399468	20.199	ng		100
10) Ethanol	4.06	45	1988657	112.847	ng		100
11) Acetonitrile	4.21	41	956604	19.736	ng		98
12) Acrolein	4.37	56	328508	22.184	ng		100
13) Acetone	4.60	58	2103312	119.109	ng	#	84
14) Trichlorofluoromethane	4.76	101	887513	22.138	ng		100
15) 2-Propanol (Isopropanol)	5.24	45	2929119	45.623	ng		96
16) Acrylonitrile	5.41	53	697994	23.017	ng		99
17) 1,1-Dichloroethene	5.78	96	507579	22.288	ng		94
18) 2-Methyl-2-Propanol (t...	6.16	59	2893597	45.986	ng		98
19) Methylene Chloride	6.12	84	525723	22.031	ng		99
20) 3-Chloro-1-propene (Al...	6.27	41	829916	20.972	ng		93
21) Trichlorotrifluoroethane	6.58	151	473438	22.433	ng		97
22) Carbon Disulfide	6.19	76	1859241	22.058	ng		100
23) trans-1,2-Dichloroethene	7.48	61	771355	23.741	ng		99
24) 1,1-Dichloroethane	7.73	63	922377	22.407	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1685634	24.170	ng		99
26) Vinyl Acetate	8.11	86	830424	126.087	ng	#	95
27) 2-Butanone (MEK)	8.30	72	383884	22.975	ng		100
28) cis-1,2-Dichloroethene	8.77	61	736934	24.191	ng		98
29) Diisopropyl Ether	9.13	87	570697	26.698	ng	#	100
30) Ethyl Acetate	9.16	61	396646	47.399	ng		98
31) n-Hexane	9.05	57	790003	23.387	ng		100
32) Chloroform	9.12	83	937133	24.342	ng		100
34) Tetrahydrofuran (THF)	9.47	72	353589	23.318	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	721650	23.817	ng		98
36) 1,2-Dichloroethane	9.85	62	721474	25.585	ng		100
38) 1,1,1-Trichloroethane	10.08	97	825410	24.023	ng		98
39) Isopropyl Acetate	10.63	61	701063	48.706	ng	#	93
40) 1-Butanol	10.69	56	1346629	56.083	ng		98
41) Benzene	10.53	78	2027865	23.947	ng		100
42) Carbon Tetrachloride	10.68	117	745349	25.494	ng		100
43) Cyclohexane	10.78	84	1815113	47.327	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1672720	23.581	ng		99
45) 1,2-Dichloropropane	11.34	63	517451	22.161	ng		99

1/7/14

Data File: I:\MS08\Data\2014_01\07\01071415.D
Acq On : 7 Jan 2014 8:33 Operator: WA
Sample : 25ng TO-15 LCS Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

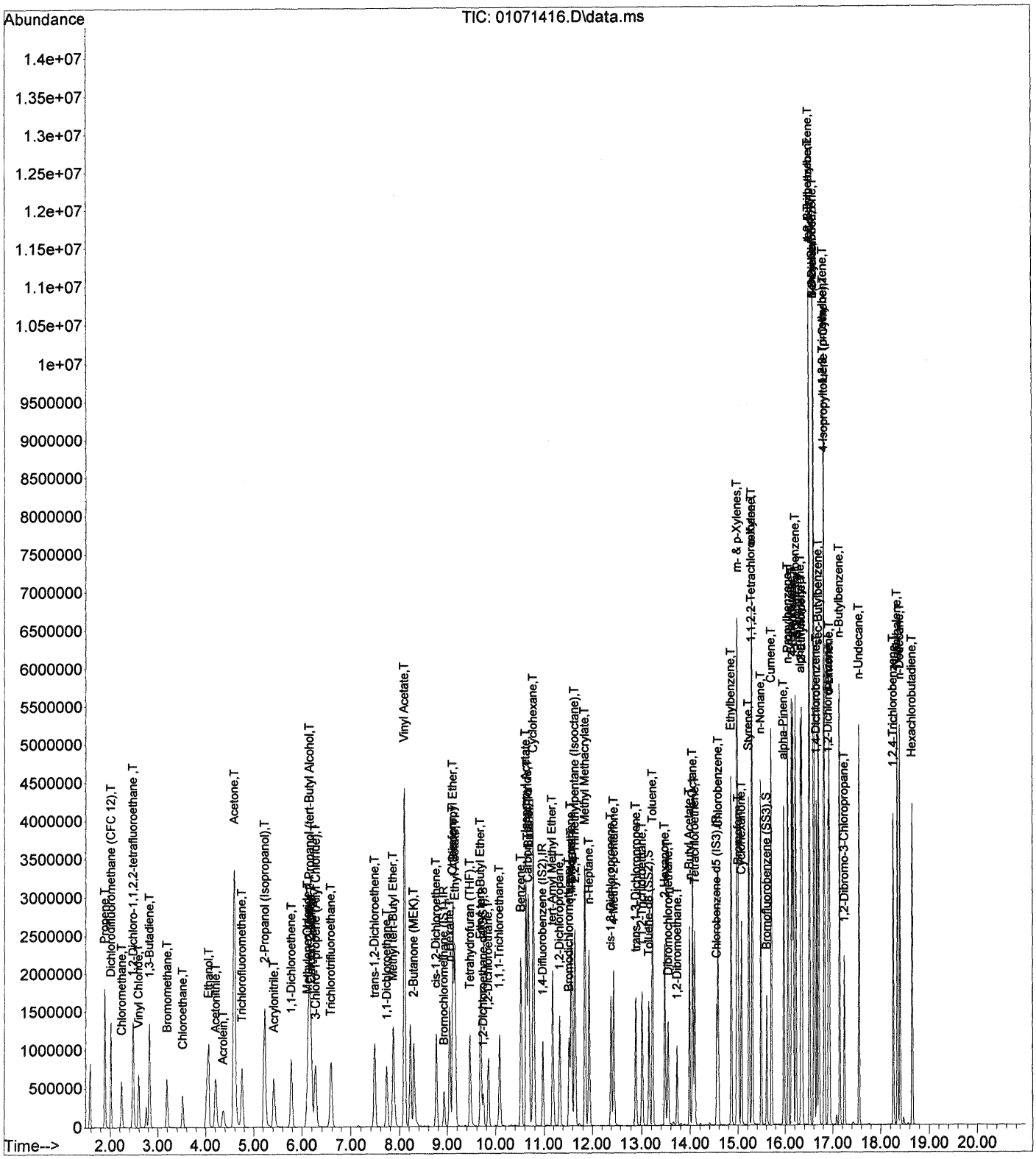
Quant Time: Jan 07 15:10:04 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.53	83	758226	25.970	ng	100
47) Trichloroethene	11.57	130	622551	22.511	ng	100
48) 1,4-Dioxane	11.58	88	487357	25.218	ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	2388703	21.700	ng	95
50) Methyl Methacrylate	11.85	100	511279	46.018	ng	92
51) n-Heptane	11.93	71	556159	22.437	ng	99
52) cis-1,3-Dichloropropene	12.40	75	935645	26.043	ng	100
53) 4-Methyl-2-pentanone	12.46	58	550765	23.377	ng	97
54) trans-1,3-Dichloropropene	12.89	75	841308	26.065	ng	100
55) 1,1,2-Trichloroethane	13.00	97	529628	23.753	ng	99
58) Toluene	13.23	91	2226277	20.767	ng	99
59) 2-Hexanone	13.48	43	1395991	23.465	ng	98
60) Dibromochloromethane	13.55	129	659067	23.949	ng	99
61) 1,2-Dibromoethane	13.73	107	613862	22.194	ng	100
62) n-Butyl Acetate	13.99	43	1499045	22.613	ng	98
63) n-Octane	14.05	57	493315	20.821	ng	100
64) Tetrachloroethene	14.10	166	681894	19.565	ng	100
65) Chlorobenzene	14.59	112	1541180	21.755	ng	100
66) Ethylbenzene	14.86	91	2644575	22.230	ng	99
67) m- & p-Xylenes	15.00	91	4385564	46.541	ng	98
68) Bromoform	15.01	173	640940	25.250	ng	99
69) Styrene	15.23	104	1718755	22.666	ng	99
70) o-Xylene	15.30	91	2240290	22.758	ng	98
71) n-Nonane	15.49	43	1197550	20.761	ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1052215	23.976	ng	100
74) Cumene	15.72	105	2790289	21.570	ng	99
75) alpha-Pinene	15.97	93	1400776	21.438	ng	96
76) n-Propylbenzene	16.07	91	3278119	22.062	ng	99
77) 3-Ethyltoluene	16.14	105	2903397	23.002	ng	99
78) 4-Ethyltoluene	16.17	105	2639895	23.315	ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2337615	23.160	ng	98
80) alpha-Methylstyrene	16.33	118	1245472	21.741	ng	98
81) 2-Ethyltoluene	16.36	105	2736658	23.022	ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2526242	24.418	ng	98
83) n-Decane	16.61	57	1353038	24.032	ng	99
84) Benzyl Chloride	16.61	91	2300036	29.116	ng	97
85) 1,3-Dichlorobenzene	16.61	146	1542688	25.107	ng	100
86) 1,4-Dichlorobenzene	16.67	146	1438770	22.657	ng	100
87) sec-Butylbenzene	16.71	105	3149203	23.812	ng	99
88) 4-Isopropyltoluene (p-...	16.83	119	3063726	23.141	ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2597841	24.905	ng	98
90) 1,2-Dichlorobenzene	16.92	146	1374001	23.313	ng	99
91) d-Limonene	16.94	68	898786	22.447	ng	99
92) 1,2-Dibromo-3-Chloropr...	17.25	157	529700	24.493	ng	90
93) n-Undecane	17.56	57	1287586	21.888	ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1082567	23.001	ng	99
95) Naphthalene	18.35	128	3364185	24.200	ng	100
96) n-Dodecane	18.41	57	1230895	21.207	ng	100
97) Hexachlorobutadiene	18.65	225	674866	22.615	ng	99
98) Cyclohexanone	15.08	55	837909	22.467	ng	97
99) tert-Butylbenzene	16.52	119	2509757	24.226	ng	100
100) n-Butylbenzene	17.15	91	2504929	24.629	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\07\01071416.D
Acq On : 7 Jan 2014 9:02 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 15:11:05 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071416.D
Acq On : 7 Jan 2014 9:02 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 15:11:05 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	182524	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	913785	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	389246	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	282416	14.235	ng		0.00
Spiked Amount 12.500			Recovery = 113.92%				
57) Toluene-d8 (SS2)	13.15	98	973194	11.736	ng		0.00
Spiked Amount 12.500			Recovery = 93.92%				
73) Bromofluorobenzene (SS3)	15.61	174	423249	12.718	ng		0.00
Spiked Amount 12.500			Recovery = 101.76%				
Target Compounds							Qvalue
2) Propene	1.88	42	534306	20.751	ng		96
3) Dichlorodifluoromethan...	2.01	85	1055976	24.249	ng		100
4) Chloromethane	2.23	50	696829	19.443	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.47	135	584430	22.118	ng		100
6) Vinyl Chloride	2.59	62	765572	21.449	ng		100
7) 1,3-Butadiene	2.82	54	667205	23.870	ng		98
8) Bromomethane	3.19	94	483927	21.957	ng		100
9) Chloroethane	3.52	64	426602	21.449	ng		99
10) Ethanol	4.06	45	2053570	115.872	ng		100
11) Acetonitrile	4.21	41	992749	20.366	ng		98
12) Acrolein	4.36	56	336909	22.622	ng		100
13) Acetone	4.60	58	2147618	120.930	ng		86
14) Trichlorofluoromethane	4.75	101	896573	22.238	ng		99
15) 2-Propanol (Isopropanol)	5.23	45	2946083	45.627	ng		96
16) Acrylonitrile	5.41	53	710199	23.287	ng		98
17) 1,1-Dichloroethene	5.78	96	514730	22.474	ng		94
18) 2-Methyl-2-Propanol (t...	6.16	59	2815810	44.497	ng		98
19) Methylene Chloride	6.12	84	536793	22.368	ng		100
20) 3-Chloro-1-propene (Al...	6.27	41	844789	21.227	ng		94
21) Trichlorotrifluoroethane	6.58	151	479760	22.604	ng		97
22) Carbon Disulfide	6.19	76	1884708	22.233	ng		100
23) trans-1,2-Dichloroethene	7.48	61	783226	23.971	ng		100
24) 1,1-Dichloroethane	7.73	63	934749	22.580	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1681505	23.974	ng		99
26) Vinyl Acetate	8.11	86	834932	126.055	ng		96
27) 2-Butanone (MEK)	8.30	72	385232	22.925	ng		99
28) cis-1,2-Dichloroethene	8.77	61	743633	24.273	ng		98
29) Diisopropyl Ether	9.13	87	575507	26.771	ng	#	99
30) Ethyl Acetate	9.16	61	401156	47.667	ng		99
31) n-Hexane	9.05	57	792416	23.326	ng		100
32) Chloroform	9.12	83	941150	24.309	ng		100
34) Tetrahydrofuran (THF)	9.47	72	357142	23.419	ng		97
35) Ethyl tert-Butyl Ether	9.69	87	728129	23.895	ng		98
36) 1,2-Dichloroethane	9.85	62	719578	25.373	ng		100
38) 1,1,1-Trichloroethane	10.08	97	833265	23.682	ng		98
39) Isopropyl Acetate	10.63	61	705919	47.892	ng	#	93
40) 1-Butanol	10.69	56	1358913	55.266	ng		99
41) Benzene	10.52	78	2043783	23.568	ng		100
42) Carbon Tetrachloride	10.67	117	751318	25.095	ng		100
43) Cyclohexane	10.78	84	1831223	46.626	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1696231	23.350	ng		99
45) 1,2-Dichloropropane	11.34	63	522844	21.866	ng		99

Data File: I:\MS08\Data\2014_01\07\01071416.D
Acq On : 7 Jan 2014 9:02 Operator: WA
Sample : 25ng TO-15 LCSD Std (125mL)
Misc : S29-12131301/S29-12161302 (1/14)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jan 07 15:11:05 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

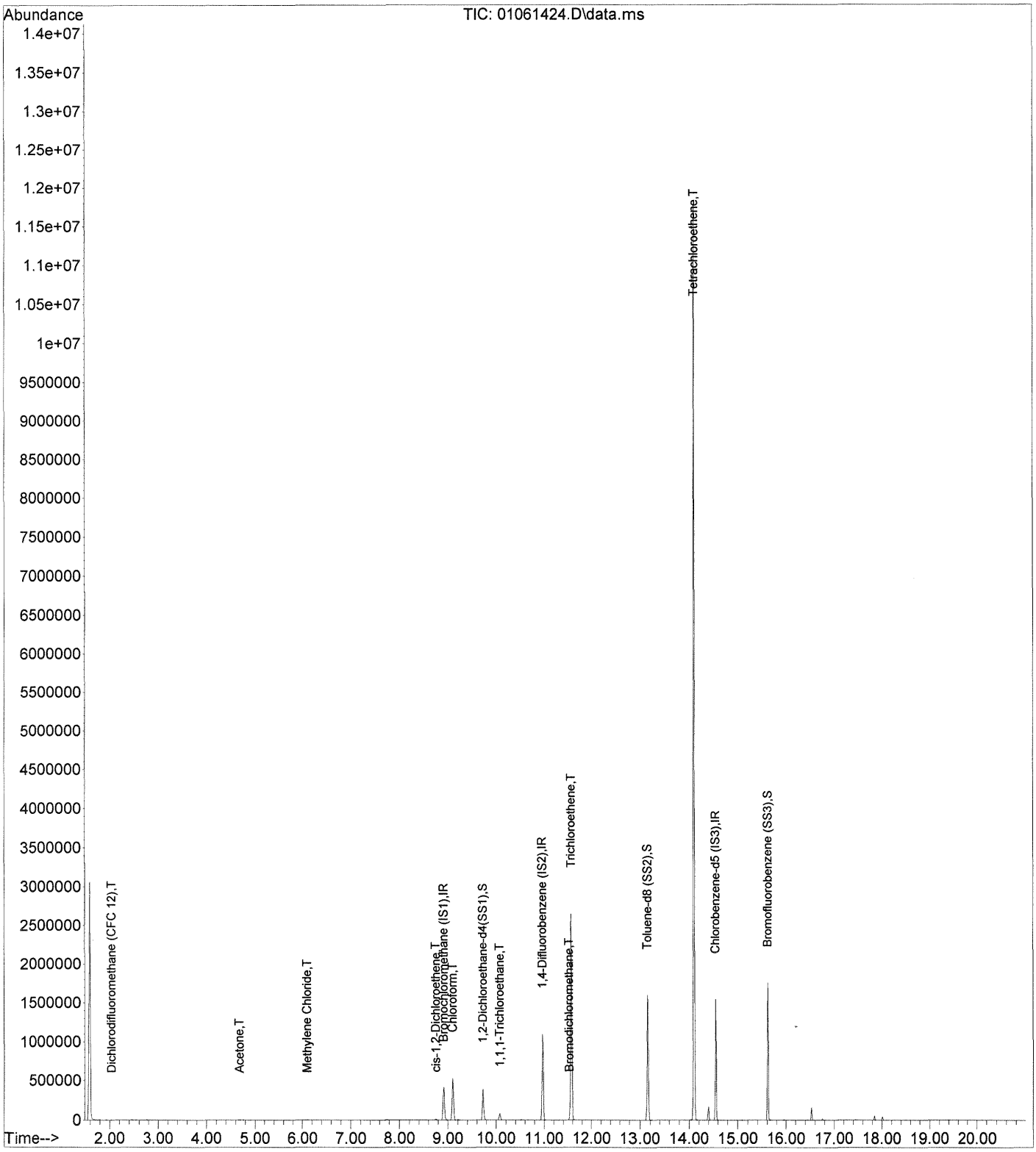
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	762163	25.492 ng	100
47) Trichloroethene	11.57	130	624729	22.060 ng	100
48) 1,4-Dioxane	11.58	88	494165	24.970 ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	2420574	21.473 ng	95
50) Methyl Methacrylate	11.85	100	519645	45.673 ng	93
51) n-Heptane	11.93	71	558953	22.020 ng	100
52) cis-1,3-Dichloropropene	12.40	75	941776	25.598 ng	100
53) 4-Methyl-2-pentanone	12.46	58	556051	23.047 ng	98
54) trans-1,3-Dichloropropene	12.89	75	848509	25.671 ng	100
55) 1,1,2-Trichloroethane	13.00	97	534019	23.388 ng	99
58) Toluene	13.23	91	2246023	20.785 ng	99
59) 2-Hexanone	13.48	43	1407218	23.466 ng	98
60) Dibromochloromethane	13.55	129	663778	23.928 ng	100
61) 1,2-Dibromoethane	13.73	107	620520	22.256 ng	100
62) n-Butyl Acetate	13.99	43	1506523	22.545 ng	99
63) n-Octane	14.05	57	492859	20.636 ng	99
64) Tetrachloroethene	14.10	166	685603	19.514 ng	100
65) Chlorobenzene	14.59	112	1550461	21.711 ng	100
66) Ethylbenzene	14.86	91	2656652	22.153 ng	99
67) m- & p-Xylenes	15.00	91	4378983	46.101 ng	98
68) Bromoform	15.01	173	645153	25.214 ng	99
69) Styrene	15.23	104	1729725	22.629 ng	99
70) o-Xylene	15.30	91	2242209	22.596 ng	98
71) n-Nonane	15.49	43	1203057	20.691 ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1051049	23.758 ng	100
74) Cumene	15.72	105	2788312	21.383 ng	99
75) alpha-Pinene	15.97	93	1402696	21.296 ng	96
76) n-Propylbenzene	16.07	91	3294195	21.994 ng	98
77) 3-Ethyltoluene	16.14	105	2903360	22.819 ng	99
78) 4-Ethyltoluene	16.17	105	2654009	23.253 ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2361065	23.206 ng	97
80) alpha-Methylstyrene	16.33	118	1256610	21.761 ng	98
81) 2-Ethyltoluene	16.36	105	2756521	23.005 ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2525608	24.217 ng	97
83) n-Decane	16.61	57	1347100	23.736 ng	100
84) Benzyl Chloride	16.61	91	2299315	28.875 ng	97
85) 1,3-Dichlorobenzene	16.61	146	1546991	24.977 ng	100
86) 1,4-Dichlorobenzene	16.67	146	1444958	22.574 ng	100
87) sec-Butylbenzene	16.71	105	3167837	23.763 ng	99
88) 4-Isopropyltoluene (p-...	16.84	119	3072339	23.022 ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2600006	24.727 ng	98
90) 1,2-Dichlorobenzene	16.92	146	1380810	23.242 ng	100
91) d-Limonene	16.94	68	907005	22.472 ng	98
92) 1,2-Dibromo-3-Chloropr...	17.25	157	535461	24.562 ng	90
93) n-Undecane	17.56	57	1295152	21.841 ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1084382	22.856 ng	100
95) Naphthalene	18.35	128	3386194	24.165 ng	100
96) n-Dodecane	18.41	57	1239019	21.177 ng	100
97) Hexachlorobutadiene	18.65	225	680988	22.639 ng	98
98) Cyclohexanone	15.08	55	837796	22.285 ng	97
99) tert-Butylbenzene	16.52	119	2519040	24.123 ng	100
100) n-Butylbenzene	17.15	91	2513612	24.517 ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061424.D
Acq On : 6 Jan 2014 19:33 Operator: WA
Sample : P1305675-004 dup (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:18:07 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061424.D
Acq On : 6 Jan 2014 19:33 Operator: WA
Sample : P1305675-004 dup (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:18:07 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	176137	12.500 ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.97	114	897424	12.500 ng	0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	395312	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	281546	14.706 ng	0.00
Spiked Amount 12.500			Recovery	= 117.68%	
57) Toluene-d8 (SS2)	13.14	98	963407	11.440 ng	0.00
Spiked Amount 12.500			Recovery	= 91.52%	
73) Bromofluorobenzene (SS3)	15.61	174	436487	12.914 ng	0.00
Spiked Amount 12.500			Recovery	= 103.28%	

Target Compounds						Qvalue
2) Propene	1.92	42	842	N.D.		
3) Dichlorodifluoromethan...	2.04	85	4266	0.102 ng		97
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	3.22	94	907	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.06	45	408	N.D.		
11) Acetonitrile	4.23	41	177	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.68	58	2294	0.134 ng	#	51
14) Trichlorofluoromethane	4.75	101	1913	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	6.10	84	2158	0.093 ng		97
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	6.57	151	52	N.D.		
22) Carbon Disulfide	6.20	76	3993	N.D.		
23) trans-1,2-Dichloroethene	7.46	61	698	N.D.		
24) 1,1-Dichloroethane	7.71	63	2619	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	8.76	61	9652	0.326 ng		97
29) Diisopropyl Ether	0.00	87	0	N.D. d		
30) Ethyl Acetate	9.20	61	535	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	9.09	83	422087	11.297 ng		99
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	9.73	62	50	N.D.		
38) 1,1,1-Trichloroethane	10.08	97	56532	1.636 ng		98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	10.53	78	5588	N.D.		
42) Carbon Tetrachloride	10.66	117	2338	N.D.		
43) Cyclohexane	10.68	84	105	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		

1/8/14

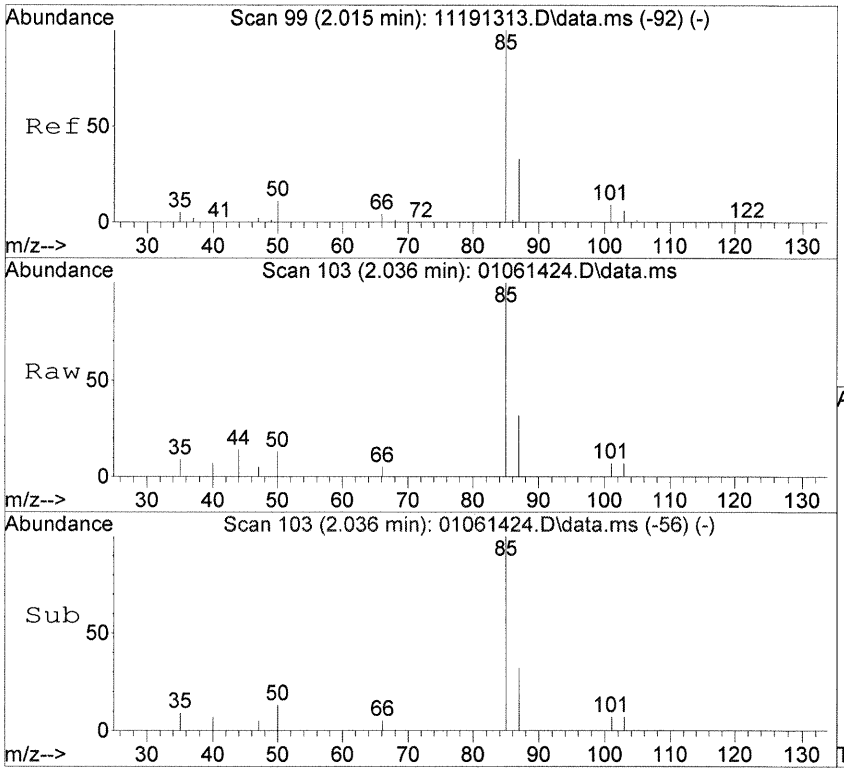
Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061424.D
Acq On : 6 Jan 2014 19:33 Operator: WA
Sample : P1305675-004 dup (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:18:07 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	4382	0.149 ng	93
47) Trichloroethene	11.57	130	902729	32.457 ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	13.23	91	2757	N.D.	
59) 2-Hexanone	13.67	43	351	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	14.01	43	637	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.10	166	3074888	86.178 ng	98
65) Chlorobenzene	14.58	112	120	N.D.	
66) Ethylbenzene	14.87	91	311	N.D.	
67) m- & p-Xylenes	14.98	91	562	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	15.60	43	49	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	15.61	105	567	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	15.95	105	2649	N.D.	
78) 4-Ethyltoluene	15.95	105	2649	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	16.53	118	1875	N.D.	
81) 2-Ethyltoluene	16.53	105	739	N.D.	
82) 1,2,4-Trimethylbenzene	16.53	105	739	N.D.	
83) n-Decane	16.61	57	227	N.D.	
84) Benzyl Chloride	16.82	91	64	N.D.	
85) 1,3-Dichlorobenzene	16.53	146	109	N.D.	
86) 1,4-Dichlorobenzene	16.53	146	109	N.D.	
87) sec-Butylbenzene	16.53	105	739	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	17.56	57	63	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	18.35	128	166	N.D.	
96) n-Dodecane	18.40	57	173	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.09	55	922	N.D.	
99) tert-Butylbenzene	16.52	119	3054	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	

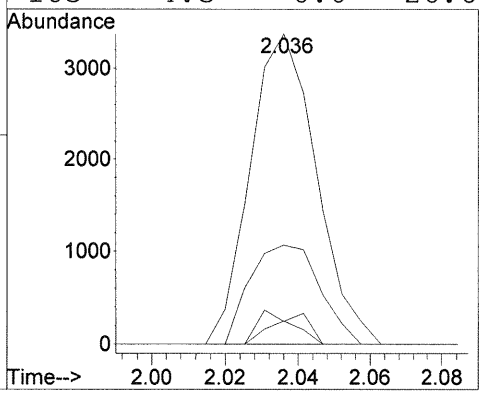
(#) = qualifier out of range (m) = manual integration (+) = signals summed

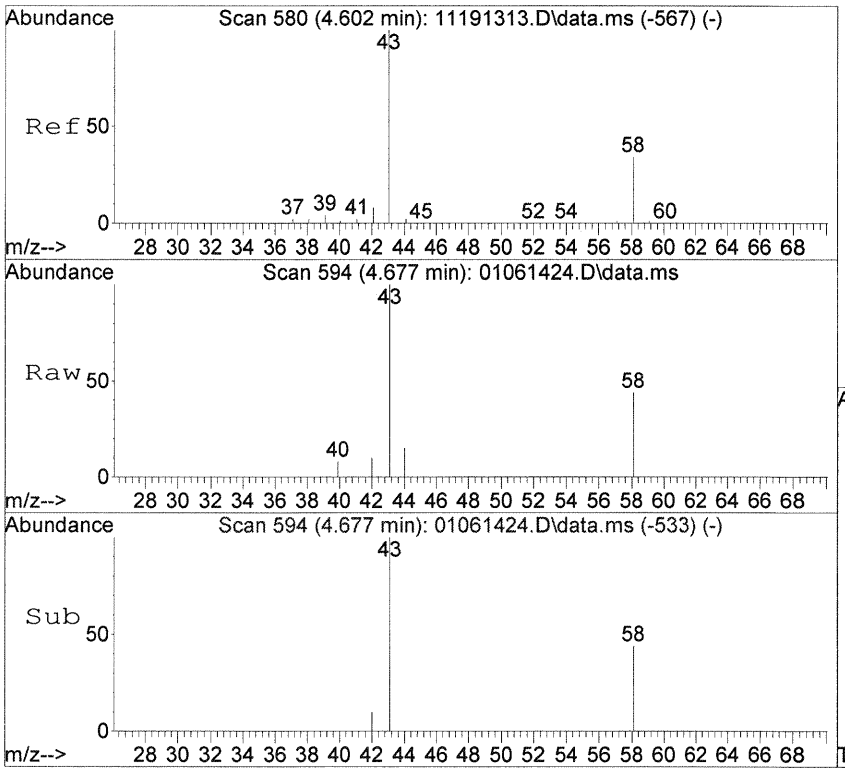


#3
Dichlorodifluoromethane (CFC 1:
Concen: 0.10 ng
RT: 2.04 min Scan# 103
Delta R.T. 0.000 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 85 Resp: 4266

Ion	Ratio	Lower	Upper
85	100		
87	33.4	12.7	52.7
101	7.2	0.0	29.1
103	4.3	0.0	26.0

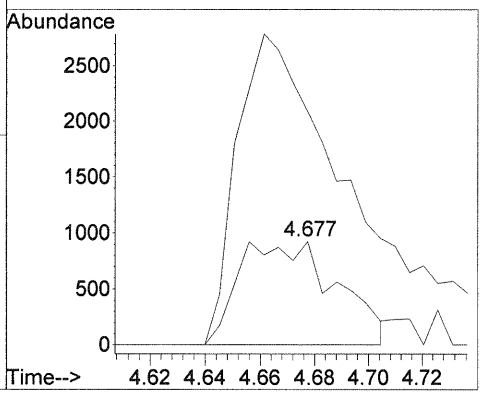


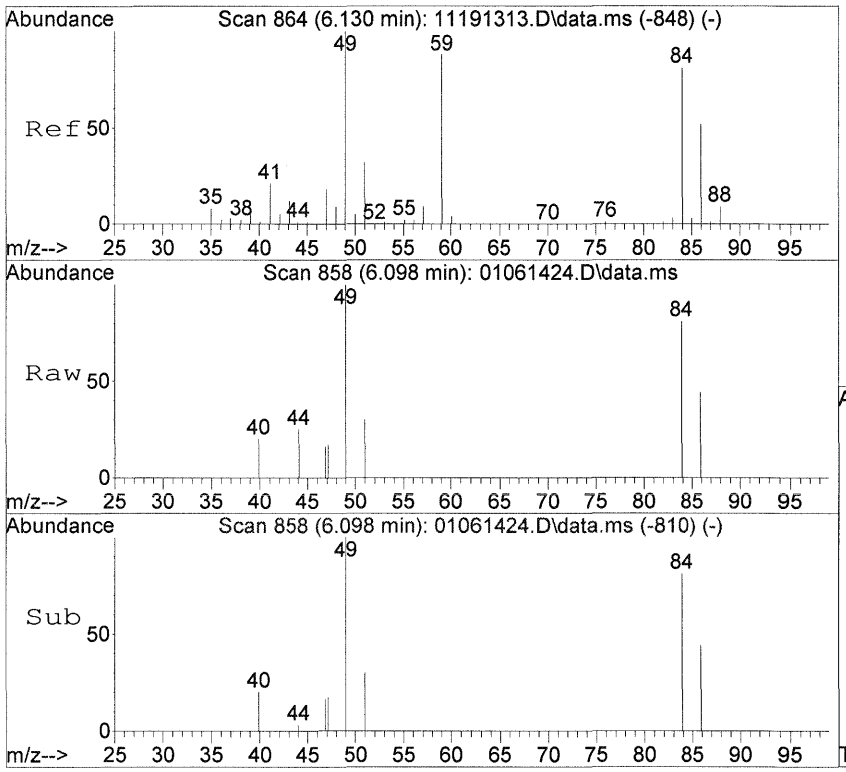


#13
Acetone
Concen: 0.13 ng
RT: 4.68 min Scan# 594
Delta R.T. 0.080 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 58 Resp: 2294

Ion	Ratio	Lower	Upper
58	100		
43	391.2	265.2	325.2#

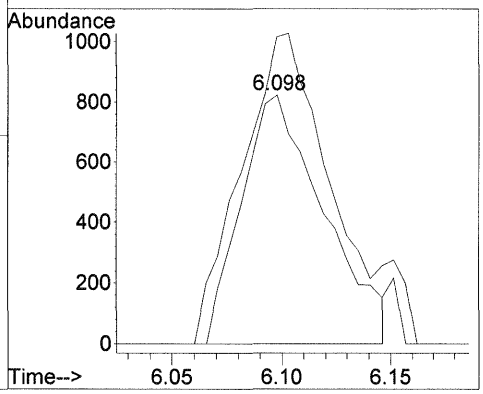


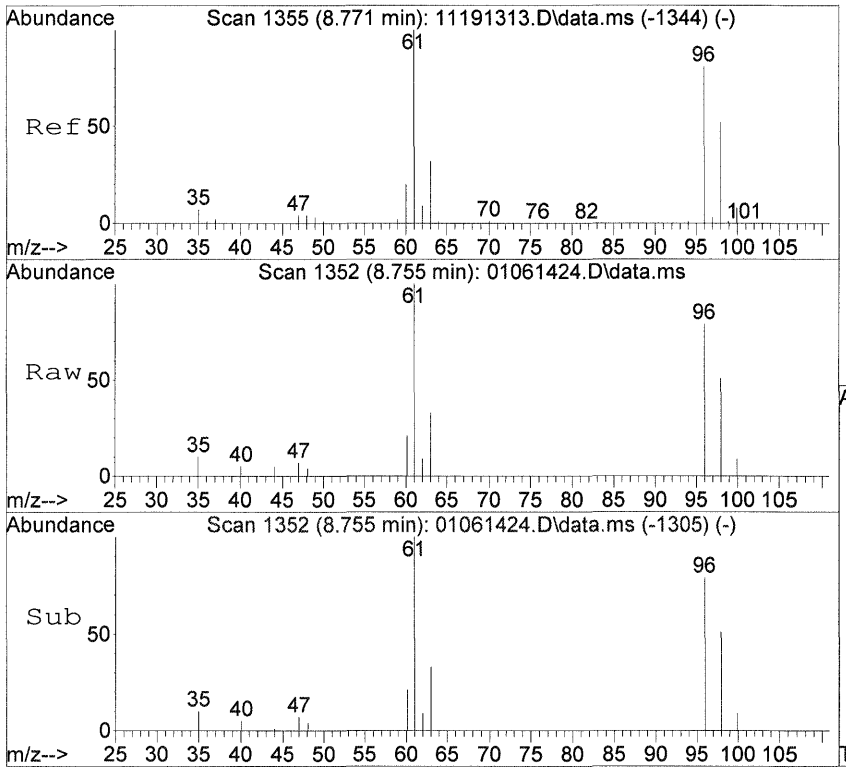


#19
Methylene Chloride
Concen: 0.09 ng
RT: 6.10 min Scan# 858
Delta R.T. 0.011 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 84 Resp: 2158

Ion	Ratio	Lower	Upper
84	100		
49	129.7	101.0	151.0

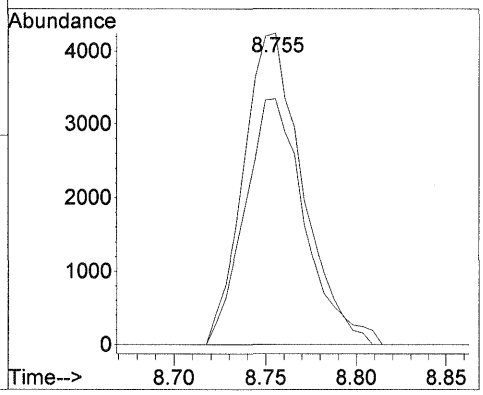


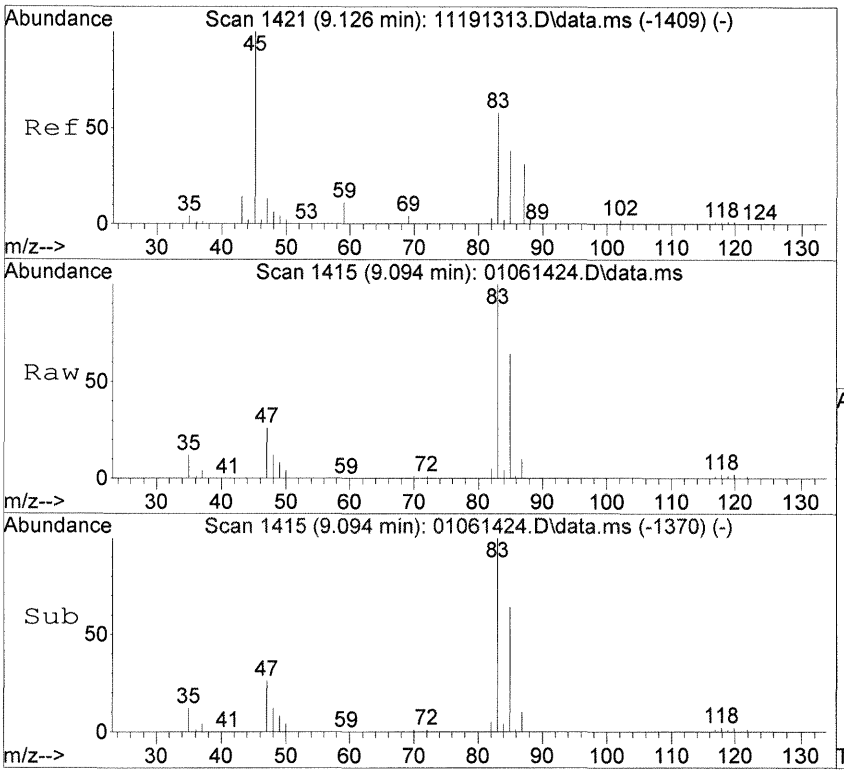


#28
cis-1,2-Dichloroethene
Concen: 0.33 ng
RT: 8.76 min Scan# 1352
Delta R.T. 0.000 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 61 Resp: 9652

Ion	Ratio	Lower	Upper
61	100		
96	78.5	61.4	101.4

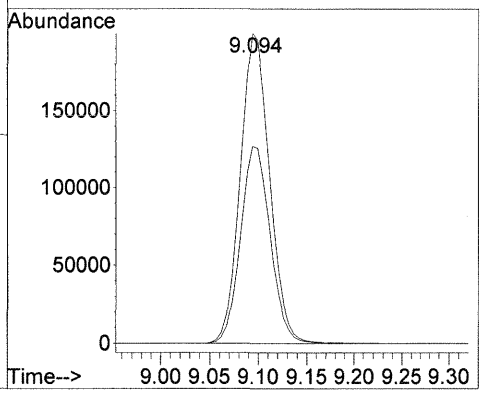


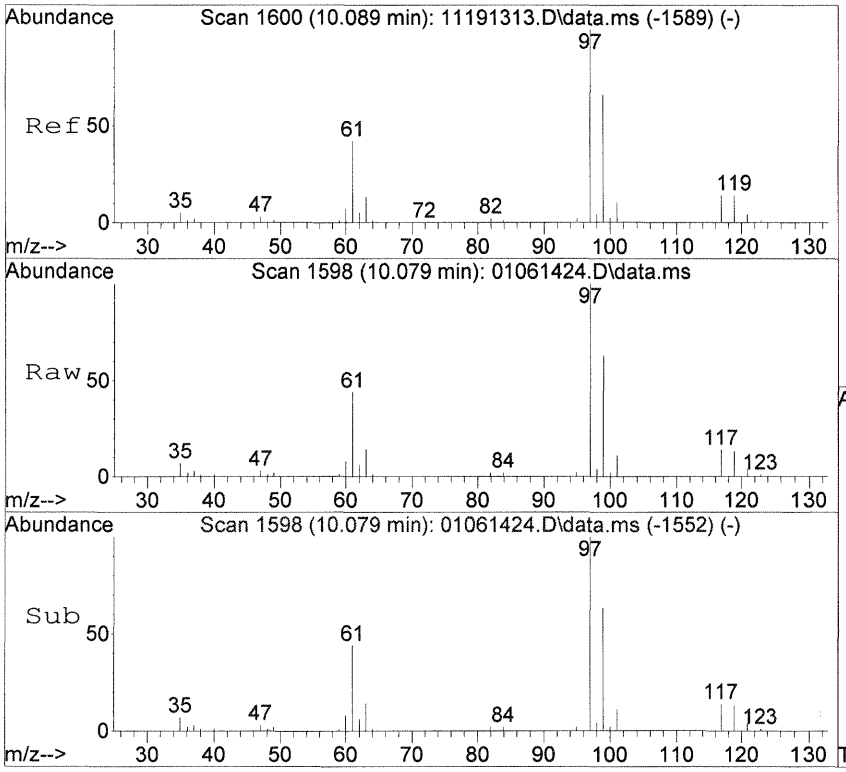


#32
Chloroform
Concen: 11.30 ng
RT: 9.09 min Scan# 1415
Delta R.T. -0.011 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 83 Resp: 422087

Ion	Ratio	Lower	Upper
83	100		
85	64.2	45.2	85.2

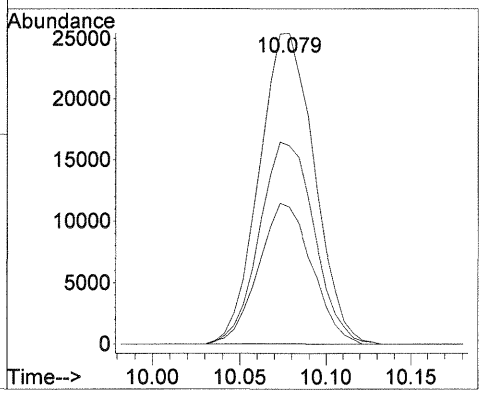


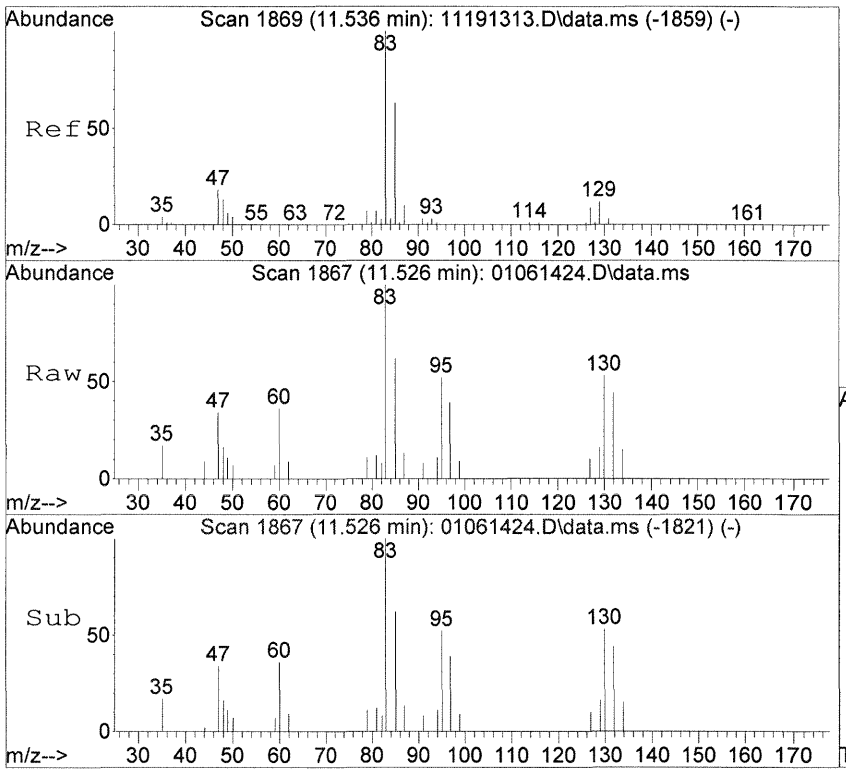


#38
1,1,1-Trichloroethane
Concen: 1.64 ng
RT: 10.08 min Scan# 1598
Delta R.T. -0.005 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 97 Resp: 56532

Ion	Ratio	Lower	Upper
97	100		
99	64.4	44.8	84.8
61	43.8	20.9	60.9

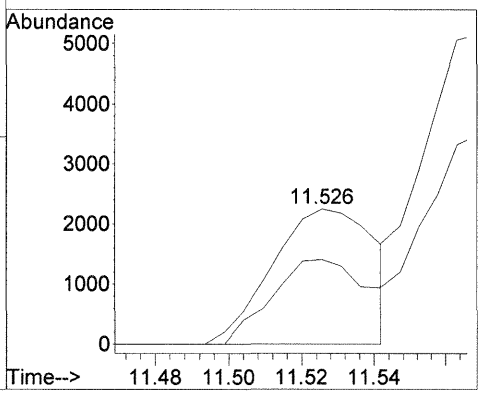


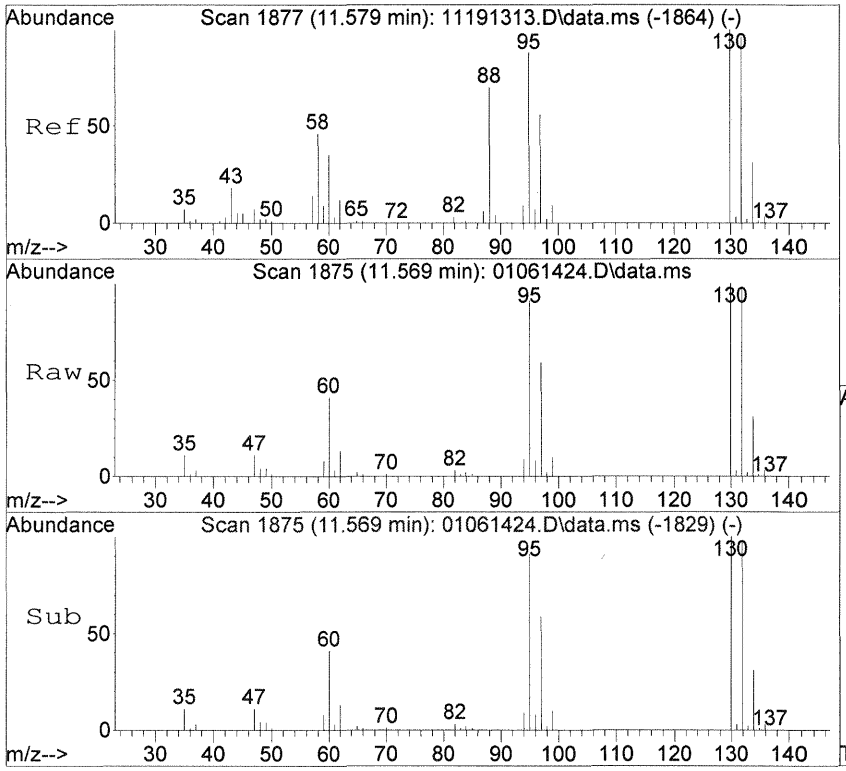


#46
Bromodichloromethane
Concen: 0.15 ng
RT: 11.53 min Scan# 1867
Delta R.T. -0.005 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion: 83 Resp: 4382

Ion	Ratio	Lower	Upper
83	100		
85	58.6	43.9	83.9

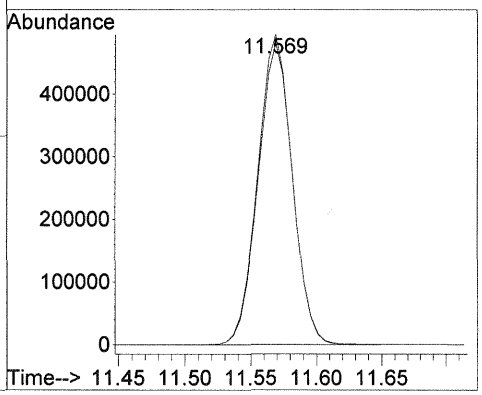


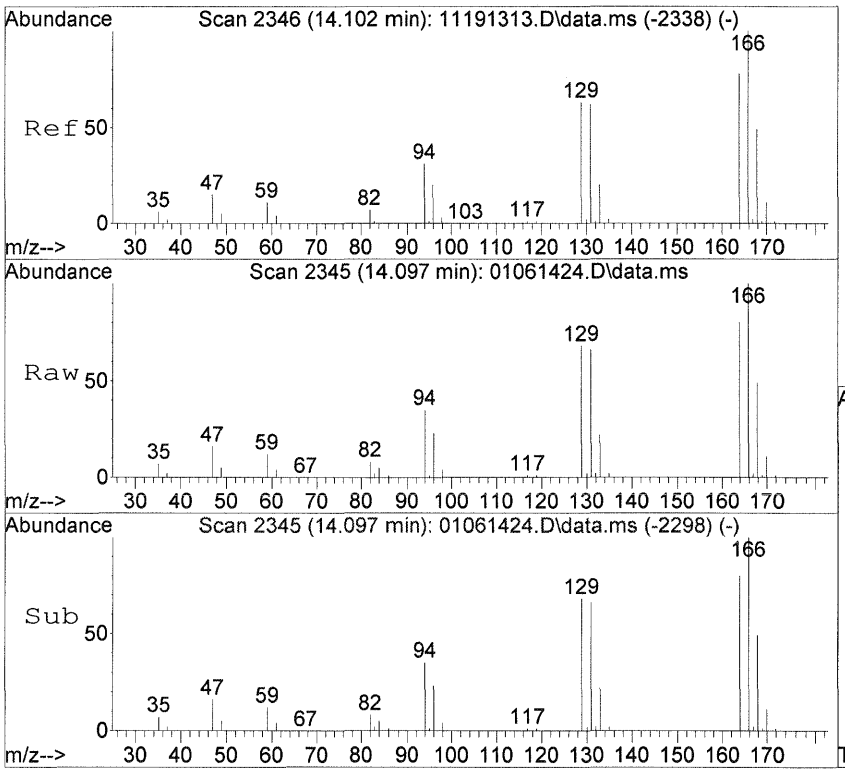


#47
Trichloroethene
Concen: 32.46 ng
RT: 11.57 min Scan# 1875
Delta R.T. -0.005 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion:130 Resp: 902729

Ion	Ratio	Lower	Upper
130	100		
132	97.2	76.5	116.5

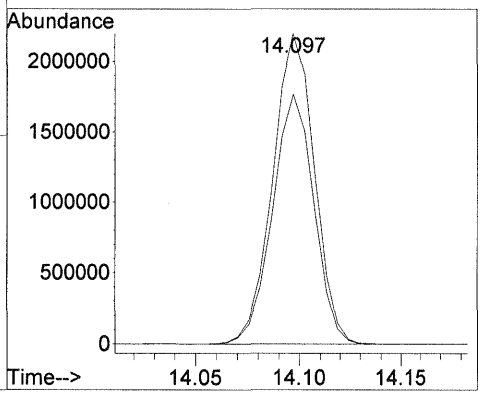




#64
Tetrachloroethene
Concen: 86.18 ng
RT: 14.10 min Scan# 2345
Delta R.T. 0.000 min
Lab File: 01061424.D
Acq: 6 Jan 2014 19:33

Tgt Ion:166 Resp: 3074888

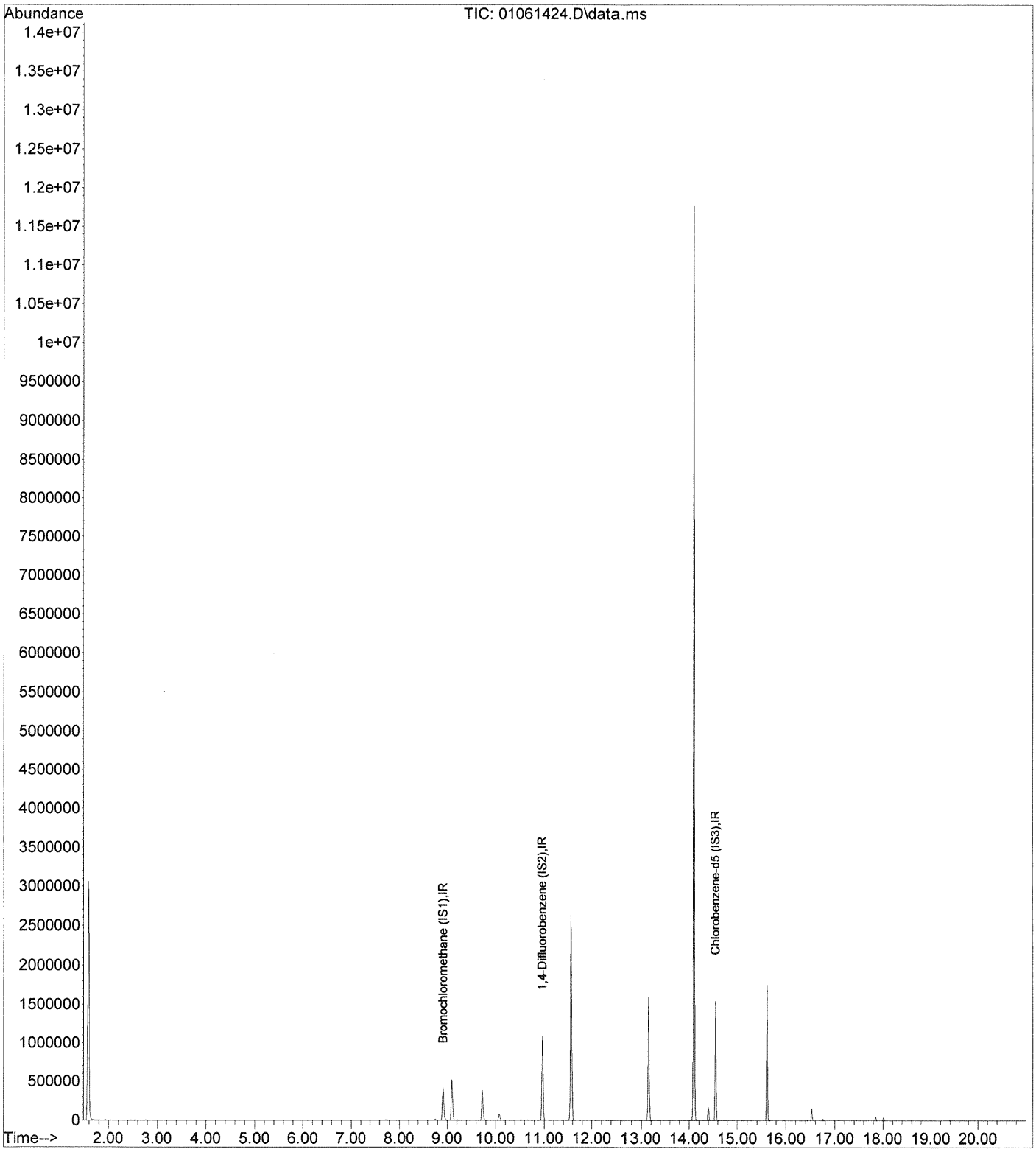
Ion	Ratio	Lower	Upper
166	100		
164	79.8	58.5	98.5



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061424.D
Acq On : 6 Jan 2014 19:33 Operator: WA
Sample : P1305675-004 dup (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:44:53 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061424.D
Acq On : 6 Jan 2014 19:33 Operator: WA
Sample : P1305675-004 dup (70mL)
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 08 14:44:53 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	176140	12.500 ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	898192	12.500 ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	395630	12.500 ng	0.00

Target Compounds					Qvalue
2) Chloropentafluoroethane	0.00	85	0	N.D.	
3) 1,1,1,2-Tetrafluoroeth...	1.78	83	889	N.D.	
4) 1,1-Difluoroethane	0.00	65	0	N.D.	
5) Chlorodifluoromethane ...	0.00	67	0	N.D.	
6) 1-Chloro-1,1-Difluoroe...	2.28	65	56	N.D.	
7) Dichlorofluoromethane ...	0.00	67	0	N.D.	
8) Vinylbromide	0.00	108	0	N.D.	
9) 2,2-Dichloro-1,1,1-tri...	0.00	83	0	N.D.	
10) 2-Methylbutane	0.00	57	0	N.D.	
11) Methyl Acetate	0.00	43	0	N.D.	
12) 2-Methylpentane	0.00	71	0	N.D.	
13) 2,2-Dichloropropane	0.00	77	0	N.D.	
14) 1,1-Dichloropropene	0.00	75	0	N.D.	
15) Thiophene	10.66	84	143	N.D.	
17) 2,3-Dimethylpentane	0.00	56	0	N.D.	
18) Dibromomethane	0.00	174	0	N.D.	
20) Methyl Cyclohexane	0.00	55	0	N.D.	
21) 1,3-Dichloropropane	0.00	76	0	N.D. d	
22) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
23) 1-Chlorohexane	14.87	91	311	N.D.	
24) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
25) Bromobenzene	0.00	77	0	N.D.	
26) 2-Chlorotoluene	0.00	91	0	N.D.	
27) 4-Chlorotoluene	0.00	91	0	N.D.	
28) Indan	0.00	117	0	N.D.	
29) Indene	0.00	115	0	N.D.	
30) 1,2,4,5-Tetramethylben...	0.00	119	0	N.D.	
31) 1,2,3,4-Tetramethylben...	0.00	119	0	N.D.	
32) 1,2,3,5-Tetramethylben...	18.02	119	63	N.D.	
33) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

DA 1/8/14

Response Factor Report Instrument #MS08

Method Path : I:\MS08\Methods\
Method File : R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Nov 21 09:17:24 2013
Response Via : Initial Calibration

Calibration Files
0.08=11191307.D 0.10=11191308.D 0.20=11191309.D 0.40=11191310.D 1.0 =11191311.D 5.0 =11191312.D
25 =11191313.D 50 =11191314.D 100 =11191315.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------										
2)	T	Propene			2.154	1.758	1.926	1.607	1.649	1.538	1.712	1.763	12.03
3)	T	Dichlorodifluo...	3.407	3.724	3.252	2.763	3.161	2.752	2.745	2.583	2.455	2.982	14.18
4)	T	Chloromethane	3.052	2.983	2.701	2.094	2.660	2.247	2.321	2.171	1.861	2.454	16.82
5)	T	1,2-Dichloro-1...	2.209	2.165	1.995	1.664	1.884	1.663	1.648	1.555	1.503	1.810	14.53
6)	T	Vinyl Chloride	2.688	2.989	2.704	2.268	2.584	2.265	2.289	2.159	2.053	2.444	12.65
7)	T	1,3-Butadiene	2.247	2.357	1.975	1.706	2.014	1.739	1.820	1.722	1.649	1.914	13.19
8)	T	Bromomethane			2.051	1.532	1.669	1.355	1.407	1.304	1.248	1.509	18.42
9)	T	Chloroethane	1.498	1.738	1.472	1.242	1.457	1.258	1.281	1.181	1.133	1.362	14.19
10)	T	Ethanol	1.472	1.415	1.377	1.132	1.165	1.001	1.203	1.107	1.052	1.214	13.84
11)	T	Acetonitrile	4.381	4.157	3.495	2.978	3.244	2.792	3.111	2.931	2.956	3.338	17.02
12)	T	Acrolein			1.286	1.069	1.101	0.951	0.962	0.904	0.865	1.020	14.17
33)	T	Acetone				1.617	1.298	1.161	1.150	1.074	0.997	1.216	18.14
14)	T	Trichlorofluor...	3.419	3.401	3.055	2.591	2.774	2.505	2.467	2.339	2.299	2.761	15.69
15)	T	2-Propanol (Is...	5.244	5.099	5.022	4.234	4.454	4.109	4.233	4.081	3.321	4.422	13.83
16)	T	Acrylonitrile	2.222	2.242	2.253	1.919	2.140	2.015	2.065	2.012	1.930	2.089	6.26
17)	T	1,1-Dichloroet...	1.791	1.960	1.690	1.425	1.600	1.430	1.464	1.405	1.352	1.568	13.20
18)	T	2-Methyl-2-Pro...	4.820	5.085	4.621	4.067	4.482	3.990	4.181	4.016	3.742	4.334	10.22
19)	T	Methylene Chlo...				1.934	1.876	1.554	1.552	1.504	1.441	1.644	12.62
20)	T	3-Chloro-1-pro...				2.834	2.809	2.368	2.439	2.271	3.633	2.725	18.41
21)	T	Trichlorotrifl...	1.710	1.760	1.599	1.354	1.480	1.321	1.332	1.281	1.245	1.454	13.25
22)	T	Carbon Disulfide				6.885	6.361	5.350	5.664	5.413	5.159	5.805	11.61
23)	T	trans-1,2-Dich...	2.486	2.679	2.378	2.048	2.318	2.085	2.143	2.056	1.946	2.238	10.82
24)	T	1,1-Dichloroet...	3.179	3.545	3.154	2.674	2.924	2.586	2.572	2.488	2.394	2.835	13.68
25)	T	Methyl tert-Bu...	5.070	5.919	5.379	4.603	5.118	4.444	4.423	4.224	4.048	4.803	12.68
26)	T	Vinyl Acetate	0.464	0.535	0.476	0.432	0.455	0.427	0.440	0.427	0.427	0.454	7.80
27)	T	2-Butanone (MEK)	1.347	1.463	1.199	1.185	1.114	1.009	1.043	1.008	0.990	1.151	14.37
28)	T	cis-1,2-Dichlo...	2.318	2.596	2.282	1.895	2.164	1.950	1.972	1.896	1.810	2.098	12.35
29)	T	Diisopropyl Ether	1.413	1.663	1.615	1.254	1.697	1.452	1.440	1.376	1.340	1.472	10.38
30)	T	Ethyl Acetate	0.655	0.700	0.637	0.529	0.594	0.517	0.533	0.514	0.508	0.576	12.49
31)	T	n-Hexane				2.785	2.797	2.313	2.052	1.968	2.044	2.326	16.26
32)	T	Chloroform	3.192	3.351	2.850	2.468	2.691	2.367	2.406	2.311	2.227	2.651	15.17
33)	S	1,2-Dichloroet...	1.363	1.385	1.368	1.367	1.359	1.350	1.333	1.346	1.358	1.359	1.10
34)	T	Tetrahydrofura...	1.275	1.247	1.124	1.011	1.135	0.988	1.026	0.987	0.964	1.084	10.77
35)	T	Ethyl tert-But...	2.288	2.548	2.237	2.018	2.199	1.920	1.930	1.851	1.791	2.087	11.84
36)	T	1,2-Dichloroet...	2.201	2.364	2.119	1.819	2.030	1.784	1.800	1.721	1.642	1.942	12.66
37)	IR	1,4-Difluorobenzen...	----------ISTD----------										
38)	T	1,1,1-Trichlor...	0.565	0.578	0.530	0.440	0.487	0.437	0.450	0.432	0.413	0.481	12.82

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BA 11/21/13

CD 11/21/13

Method Path : I:\MS08\Methods\
Method File : R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

39)	T	Isopropyl Acetate	0.230	0.246	0.214	0.186	0.211	0.182	0.193	0.182	0.172	0.202	12.42
40)	T	1-Butanol	0.335	0.319	0.323	0.283	0.295	0.286	0.397	0.383	0.407	0.336	14.27
41)	T	Benzene			1.454	1.197	1.315	1.124	1.131	1.073	1.010	1.186	12.83
42)	T	Carbon Tetrach...	0.436	0.463	0.438	0.373	0.426	0.379	0.403	0.389	0.378	0.410	7.90
43)	T	Cyclohexane	0.626	0.643	0.574	0.506	0.558	0.488	0.502	0.483	0.456	0.537	12.33
44)	T	tert-Amyl Meth...	1.115	1.177	1.056	0.922	1.035	0.911	0.961	0.915	0.851	0.994	10.87
45)	T	1,2-Dichloropr...	0.380	0.394	0.355	0.304	0.336	0.294	0.308	0.294	0.279	0.327	12.57
46)	T	Bromodichlorom...	0.467	0.479	0.418	0.360	0.426	0.377	0.403	0.386	0.365	0.409	10.42
47)	T	Trichloroethene	0.454	0.468	0.432	0.356	0.387	0.342	0.361	0.347	0.339	0.387	13.07
48)	T	1,4-Dioxane	0.253	0.330	0.302	0.252	0.268	0.238	0.277	0.264	0.253	0.271	10.66
49)	T	2,2,4-Trimethy...	1.773	1.864	1.726	1.476	1.629	1.381	1.440	1.360	1.231	1.542	13.94
50)	T	Methyl Methacr...	0.177	0.181	0.163	0.141	0.157	0.143	0.152	0.146	0.140	0.156	9.87
51)	T	n-Heptane	0.413	0.418	0.391	0.335	0.368	0.312	0.308	0.293	0.285	0.347	14.91
52)	T	cis-1,3-Dichlo...	0.544	0.571	0.529	0.457	0.517	0.470	0.506	0.481	0.455	0.503	8.04
53)	T	4-Methyl-2-pen...	0.422	0.383	0.356	0.294	0.321	0.286	0.321	0.303	0.286	0.330	14.43
54)	T	trans-1,3-Dich...	0.485	0.518	0.454	0.392	0.465	0.426	0.466	0.445	0.419	0.452	8.28
55)	T	1,1,2-Trichlor...	0.361	0.353	0.332	0.289	0.322	0.285	0.305	0.289	0.275	0.312	9.93
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------										
57)	S	Toluene-d8 (SS2)	2.682	2.664	2.669	2.659	2.647	2.618	2.712	2.659	2.656	2.663	0.96
58)	T	Toluene	4.165	4.391	3.840	3.214	3.477	3.081	3.281	3.019	2.765	3.470	15.85
59)	T	2-Hexanone	2.153	2.164	2.053	1.820	1.899	1.720	2.005	1.840	1.678	1.926	9.25
60)	T	Dibromochlorom...	0.896	1.019	0.934	0.799	0.898	0.829	0.922	0.877	0.843	0.891	7.32
61)	T	1,2-Dibromoethane	1.037	1.018	0.980	0.788	0.886	0.803	0.893	0.845	0.809	0.895	10.64
62)	T	n-Butyl Acetate	2.369	2.484	2.261	1.921	2.140	1.921	2.275	2.083	1.858	2.146	10.19
63)	T	n-Octane	0.857	0.938	0.825	0.738	0.796	0.694	0.738	0.680	0.637	0.767	12.44
64)	T	Tetrachloroethene	1.255	1.321	1.253	1.038	1.134	0.998	1.095	1.042	1.018	1.128	10.60
65)	T	Chlorobenzene	2.617	2.804	2.526	2.108	2.294	2.029	2.246	2.084	1.932	2.293	12.91
66)	T	Ethylbenzene	4.701	4.607	4.255	3.511	3.924	3.474	3.757	3.447	2.983	3.851	14.93
67)	T	m- & p-Xylenes	3.684	3.644	3.365	2.801	3.107	2.767	3.020	2.762	2.303	3.050	14.84
68)	T	Bromoform	0.881	0.894	0.826	0.708	0.785	0.731	0.881	0.849	0.841	0.822	8.15
69)	T	Styrene	2.710	2.891	2.579	2.209	2.469	2.215	2.514	2.350	2.155	2.455	10.12
70)	T	o-Xylene	3.600	3.930	3.504	2.947	3.195	2.856	3.153	2.903	2.592	3.187	13.25
71)	T	n-Nonane	2.258	2.254	2.041	1.749	1.908	1.700	1.813	1.641	1.442	1.867	14.80
72)	T	1,1,2,2-Tetrac...	1.459	1.664	1.514	1.328	1.393	1.290	1.498	1.394	1.246	1.421	9.09
73)	S	Bromofluoroben...	1.089	1.080	1.078	1.085	1.078	1.060	1.043	1.053	1.052	1.069	1.56
74)	T	Cumene	4.956	5.108	4.575	3.879	4.304	3.779	4.143	3.790	3.153	4.188	14.86
75)	T	alpha-Pinene	2.376	2.516	2.216	1.949	2.159	1.921	2.108	1.976	1.815	2.115	10.78
76)	T	n-Propylbenzene	5.572	5.850	5.344	4.476	5.021	4.458	4.869	4.353	3.344	4.810	15.75
77)	T	3-Ethyltoluene	4.722	4.922	4.367	3.758	4.139	3.659	4.321	3.702	3.185	4.086	13.65
78)	T	4-Ethyltoluene	4.218	4.366	4.004	3.444	3.806	3.401	3.516	3.460	2.773	3.665	13.33
79)	T	1,3,5-Trimethy...	3.685	3.862	3.535	2.989	3.324	2.951	3.320	3.051	2.689	3.267	11.68
80)	T	alpha-Methylst...	1.889	2.060	1.949	1.636	1.833	1.682	2.012	1.885	1.744	1.854	7.83
81)	T	2-Ethyltoluene	4.363	4.676	4.118	3.570	3.904	3.452	3.905	3.582	3.061	3.848	12.84
82)	T	1,2,4-Trimethy...	3.794	4.010	3.611	3.047	3.347	2.989	3.432	3.166	2.746	3.349	12.17
83)	T	n-Decane	2.166	2.175	2.054	1.792	1.931	1.732	1.831	1.566	1.156	1.823	17.64
84)	T	Benzyl Chloride	2.581	2.781	2.546	2.321	2.430	2.369	2.973	2.740	2.274	2.557	9.22
85)	T	1,3-Dichlorobe...	2.233	2.210	2.146	1.771	1.921	1.712	2.087	1.968	1.853	1.989	9.58
86)	T	1,4-Dichlorobe...	2.337	2.446	2.247	1.894	1.936	1.750	2.084	1.976	1.829	2.056	11.67

SAT 11/21/13

CD 11/21/13

Method Path : I:\MS08\Methods\
Method File : R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

87)	T	sec-Butylbenzene	4.923	5.070	4.675	4.045	4.406	3.924	4.371	3.987	3.129	4.281	13.84
88)	T	4-Isopropyltol...	4.940	5.142	4.745	3.957	4.336	3.873	4.422	4.026	3.130	4.286	14.47
89)	T	1,2,3-Trimethy...	3.988	3.978	3.570	3.084	3.343	2.988	3.484	3.194	2.761	3.377	12.54
90)	T	1,2-Dichlorobe...	2.172	2.298	2.048	1.702	1.800	1.615	1.965	1.840	1.730	1.908	12.02
91)	T	d-Limonene	1.379	1.469	1.376	1.153	1.319	1.183	1.381	1.280	1.125	1.296	9.20
92)	T	1,2-Dibromo-3-...	0.664	0.778	0.725	0.640	0.622	0.578	0.800	0.766	0.727	0.700	11.01
93)	T	n-Undecane	2.082	2.227	2.050	1.800	1.946	1.746	1.967	1.783	1.537	1.904	10.95
94)	T	1,2,4-Trichlor...	1.847	1.864	1.690	1.368	1.226	1.119	1.626	1.529	1.444	1.524	17.08
95)	T	Naphthalene	5.452	5.457	4.932	4.281	3.647	3.345	5.221	4.738	3.428	4.500	18.99
96)	T	n-Dodecane	2.150	2.188	2.105	1.798	1.748	1.590	1.980	1.802	1.548	1.879	12.67
97)	T	Hexachlorobuta...	1.102	1.138	1.075	0.914	0.850	0.755	0.986	0.946	0.929	0.966	12.85
98)	T	Cyclohexanone	1.344	1.367	1.240	1.105	1.118	0.996	1.327	1.233	1.135	1.207	10.51
99)	T	tert-Butylbenzene	3.889	3.981	3.590	3.058	3.347	2.982	3.377	3.155	2.801	3.353	12.05
100)	T	n-Butylbenzene	3.875	3.945	3.626	3.028	3.269	2.917	3.353	3.037	2.582	3.292	13.84

(#) = Out of Range

KM 11/21/13

CD 11/21/13

Primary Source Standards Concentrations
(Working & Initial Calibration)

0.2ng/L Std. ID:
1ng/L Std. ID: S25-11191301
4ng/L Std. ID:
20ng/L Std. ID: S25-11181302
200ng/L Std. ID: S25-11181303

Dilution Factors:		5	50	250	1000	5000	Working STD Conc.(ng/L):	ICAL Concentrations (Primary Source)												
								NA	NA	NA	NA	1	1	1	1	20	20	200	200	200
	Source Std.	Primary Working Standards					Injection (L):	NA	NA	NA	NA	0.080	0.100	0.200	0.400	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	ICAL Points:	0.005ng	0.01ng	0.02ng	0.05ng	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
Propene	0.98	196	19.6	3.92	0.98	0.196		NA	NA	NA	NA	0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
Dichlorodifluoromethane	1.00	200	20.0	4.00	1.00	0.200		NA	NA	NA	NA	0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Chloromethane	0.96	192	19.2	3.84	0.96	0.192		NA	NA	NA	NA	0.0768	0.096	0.192	0.384	0.96	4.80	24.00	48.0	96
Freon-114	1.00	200	20.0	4.00	1.00	0.200		NA	NA	NA	NA	0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Vinyl Chloride	0.97	194	19.4	3.88	0.97	0.194		NA	NA	NA	NA	0.0776	0.097	0.194	0.388	0.97	4.85	24.25	48.5	97
1,3-Butadiene	1.18	236	23.6	4.72	1.18	0.236		NA	NA	NA	NA	0.0944	0.118	0.236	0.472	1.18	5.90	29.50	59.0	118
Bromomethane	0.97	194	19.4	3.88	0.97	0.194		NA	NA	NA	NA	0.0776	0.097	0.194	0.388	0.97	4.85	24.25	48.5	97
Chloroethane	0.97	194	19.4	3.88	0.97	0.194		NA	NA	NA	NA	0.0776	0.097	0.194	0.388	0.97	4.85	24.25	48.5	97
Ethanol	5.05	1010	101.0	20.20	5.05	1.010		NA	NA	NA	NA	0.4040	0.505	1.010	2.020	5.05	25.25	126.25	252.5	505
Acetonitrile	0.99	198	19.8	3.96	0.99	0.198		NA	NA	NA	NA	0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Acrolein	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Acetone	5.29	1058	105.8	21.16	5.29	1.058		NA	NA	NA	NA	0.4232	0.529	1.058	2.116	5.29	26.45	132.25	264.5	529
Trichlorofluoromethane	0.99	198	19.8	3.96	0.99	0.198		NA	NA	NA	NA	0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Isopropanol	2.09	418	41.8	8.36	2.09	0.418		NA	NA	NA	NA	0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
Acrylonitrile	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,1-Dichloroethene	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
tert-Butanol	2.08	416	41.6	8.32	2.08	0.416		NA	NA	NA	NA	0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208
Methylene Chloride	1.01	202	20.2	4.04	1.01	0.202		NA	NA	NA	NA	0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Allyl Chloride	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Trichlorotrifluoroethane	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Carbon Disulfide	0.98	196	19.6	3.92	0.98	0.196		NA	NA	NA	NA	0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
trans-1,2-Dichloroethene	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,1-Dichloroethane	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Methyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Vinyl Acetate	5.10	1020	102.0	20.40	5.10	1.020		NA	NA	NA	NA	0.4080	0.510	1.020	2.040	5.10	25.50	127.50	255.0	510
2-Butanone	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
cis-1,2-Dichloroethene	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Diisopropyl Ether	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Ethyl Acetate	2.09	418	41.8	8.36	2.09	0.418		NA	NA	NA	NA	0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
n-Hexane	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Chloroform	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
Tetrahydrofuran	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Ethyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,2-Dichloroethane	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,1,1-Trichloroethane	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Isopropyl Acetate	2.18	436	43.6	8.72	2.18	0.436		NA	NA	NA	NA	0.1744	0.218	0.436	0.872	2.18	10.90	54.50	109.0	218
1-Butanol	2.19	438	43.8	8.76	2.19	0.438		NA	NA	NA	NA	0.1752	0.219	0.438	0.876	2.19	10.95	54.75	109.5	219
Benzene	1.10	220	22.0	4.40	1.10	0.220		NA	NA	NA	NA	0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110
Carbon Tetrachloride	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Cyclohexane	2.06	412	41.2	8.24	2.06	0.412		NA	NA	NA	NA	0.1648	0.206	0.412	0.824	2.06	10.30	51.50	103.0	206
tert-Amyl Methyl Ether	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dichloropropane	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
Bromodichloromethane	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Trichloroethene	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,4-Dioxane	1.09	218	21.8	4.36	1.09	0.218		NA	NA	NA	NA	0.0872	0.109	0.218	0.436	1.09	5.45	27.25	54.5	109
Isooctane	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Methyl Methacrylate	2.08	416	41.6	8.32	2.08	0.416		NA	NA	NA	NA	0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208

CD 11/21/13

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Primary Source Standards Concentrations
(Working & Initial Calibration)

0.2ng/L Std. ID:
1ng/L Std. ID: S25-11191301
4ng/L Std. ID:
20ng/L Std. ID: S25-11181302
200ng/L Std. ID: S25-11181303

Dilution Factors:		5	50	250	1000	5000	Working STD Conc.(ng/L):	NA	NA	NA	NA	1	1	1	1	20	20	200	200	200
	Source Std.	Primary Working Standards					Injection (L):	NA	NA	NA	NA	0.080	0.100	0.200	0.400	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	ICAL Points:	0.005ng	0.01ng	0.02ng	0.05ng	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
n-Heptane	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
cis-1,3-Dichloropropene	1.02	204	20.4	4.08	1.02	0.204		NA	NA	NA	NA	0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
4-Methyl-2-pentanone	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
trans-1,3-Dichloropropene	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
1,1,2-Trichloroethane	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
Toluene	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
2-Hexanone	1.11	222	22.2	4.44	1.11	0.222		NA	NA	NA	NA	0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
Dibromochloromethane	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
1,2-Dibromoethane	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
n-Butyl Acetate	1.12	224	22.4	4.48	1.12	0.224		NA	NA	NA	NA	0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112
n-Octane	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Tetrachloroethene	0.98	196	19.6	3.92	0.98	0.196		NA	NA	NA	NA	0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
Chlorobenzene	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Ethylbenzene	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
m-&p-Xylene	2.10	420	42.0	8.40	2.10	0.420		NA	NA	NA	NA	0.1680	0.210	0.420	0.840	2.10	10.50	52.50	105.0	210
Bromoform	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Styrene	1.09	218	21.8	4.36	1.09	0.218		NA	NA	NA	NA	0.0872	0.109	0.218	0.436	1.09	5.45	27.25	54.5	109
o-Xylene	1.03	206	20.6	4.12	1.03	0.206		NA	NA	NA	NA	0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
n-Nonane	1.02	204	20.4	4.08	1.02	0.204		NA	NA	NA	NA	0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
1,1,2,2-Tetrachloroethane	1.01	202	20.2	4.04	1.01	0.202		NA	NA	NA	NA	0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Cumene	1.01	202	20.2	4.04	1.01	0.202		NA	NA	NA	NA	0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
alpha-Pinene	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
n-Propylbenzene	1.00	200	20.0	4.00	1.00	0.200		NA	NA	NA	NA	0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
3-Ethyltoluene	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
4-Ethyltoluene	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,3,5-Trimethylbenzene	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
alpha-Methylstyrene	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
2-Ethyltoluene	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,2,4-Trimethylbenzene	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
n-Decane	1.02	204	20.4	4.08	1.02	0.204		NA	NA	NA	NA	0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
Benzyl Chloride	1.10	220	22.0	4.40	1.10	0.220		NA	NA	NA	NA	0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110
1,3-Dichlorobenzene	1.10	220	22.0	4.40	1.10	0.220		NA	NA	NA	NA	0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110
1,4-Dichlorobenzene	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
sec-Butylbenzene	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
p-Isopropyltoluene	1.02	204	20.4	4.08	1.02	0.204		NA	NA	NA	NA	0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
1,2,3-Trimethylbenzene	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
1,2-Dichlorobenzene	1.08	216	21.6	4.32	1.08	0.216		NA	NA	NA	NA	0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
d-Limonene	1.05	210	21.0	4.20	1.05	0.210		NA	NA	NA	NA	0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,2-Dibromo-3-chloropropane	1.06	212	21.2	4.24	1.06	0.212		NA	NA	NA	NA	0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
n-Undecane	1.01	202	20.2	4.04	1.01	0.202		NA	NA	NA	NA	0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
1,2,4-Trichlorobenzene	1.09	218	21.8	4.36	1.09	0.218		NA	NA	NA	NA	0.0872	0.109	0.218	0.436	1.09	5.45	27.25	54.5	109
Naphthalene	1.02	204	20.4	4.08	1.02	0.204		NA	NA	NA	NA	0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
n-Dodecane	1.04	208	20.8	4.16	1.04	0.208		NA	NA	NA	NA	0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Hexachloro-1,3-butadiene	1.09	218	21.8	4.36	1.09	0.218		NA	NA	NA	NA	0.0872	0.109	0.218	0.436	1.09	5.45	27.25	54.5	109
Methacrylonitrile	1.01	202	20.2	4.04	1.01	0.202		NA	NA	NA	NA	0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Cyclohexanone	1.12	224	22.4	4.48	1.12	0.224		NA	NA	NA	NA	0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112
tert-Butylbenzene	1.07	214	21.4	4.28	1.07	0.214		NA	NA	NA	NA	0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
n-Butylbenzene	1.10	220	22.0	4.40	1.10	0.220		NA	NA	NA	NA	0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110

CO 11/21/13 PSA 11/21/13

Calibration Status Report Instrument #MS08

Method : I:\MS08\Methods\R8111913.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	0.08	0	13	I:\MS08\Data\2013_11\19\11191307.D
2	0.10	0	13	I:\MS08\Data\2013_11\19\11191308.D
3	0.20	0	13	I:\MS08\Data\2013_11\19\11191309.D
4	0.40	0	13	I:\MS08\Data\2013_11\19\11191310.D
5	1.0	1	13	I:\MS08\Data\2013_11\19\11191311.D
6	5.0	5	13	I:\MS08\Data\2013_11\19\11191312.D
7	25	25	13	I:\MS08\Data\2013_11\19\11191313.D
8	50	49	13	I:\MS08\Data\2013_11\19\11191314.D
9	100	98	13	I:\MS08\Data\2013_11\19\11191315.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.08	Nov 20 07:42 2013	Nov 20 07:19 2013	19 Nov 2013 14:07
2	0.10	Nov 20 07:43 2013	Nov 20 07:32 2013	19 Nov 2013 14:36
3	0.20	Nov 20 08:04 2013	Nov 20 08:03 2013	19 Nov 2013 15:06
4	0.40	Nov 20 08:04 2013	Nov 20 08:04 2013	19 Nov 2013 15:35
5	1.0	Nov 20 07:44 2013	Nov 20 07:16 2013	19 Nov 2013 16:04
6	5.0	Nov 20 07:44 2013	Nov 20 07:16 2013	19 Nov 2013 16:34
7	25	Nov 20 07:44 2013	Nov 20 07:13 2013	19 Nov 2013 17:03
8	50	Nov 20 07:45 2013	Nov 20 07:16 2013	19 Nov 2013 17:32
9	100	Nov 20 07:45 2013	Nov 20 07:37 2013	19 Nov 2013 18:01

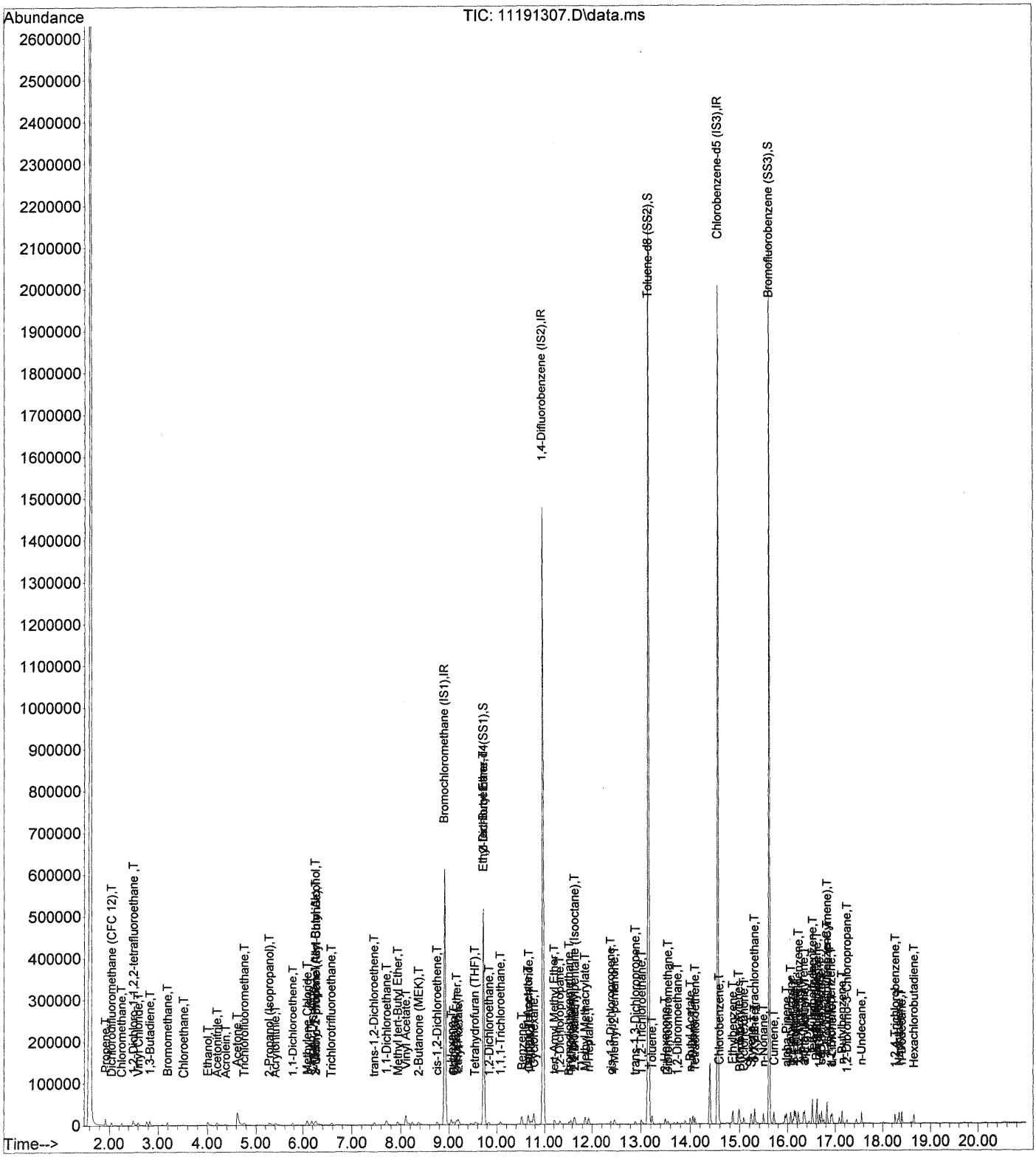
R8111913.M Wed Nov 20 10:25:59 2013

BM 11/21/13

CD 11/20/13

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:19:39 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:19:39 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	259217	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	1285427	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	504936	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.73	65	353210	11.494	ng		-0.01
Spiked Amount 12.500			Recovery = 91.92%				
57) Toluene-d8 (SS2)	13.15	98	1354454	12.662	ng		0.00
Spiked Amount 12.500			Recovery = 101.28%				
73) Bromofluorobenzene (SS3)	15.61	174	549800	12.846	ng		0.00
Spiked Amount 12.500			Recovery = 102.80%				
Target Compounds							Qvalue
2) Propene	1.92	42	4346m	0.125	ng		
3) Dichlorodifluoromethan...	2.04	85	5653	0.113	ng		96
4) Chloromethane	2.25	50	4861	0.163	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.50	135	3665	0.133	ng		92
6) Vinyl Chloride	2.60	62	4325	0.116	ng		96
7) 1,3-Butadiene	2.83	54	4399	0.163	ng		94
8) Bromomethane	3.19	94	4484	0.194	ng		96
9) Chloroethane	3.52	64	2411	0.115	ng		80
10) Ethanol	4.01	45	12329	0.701	ng		94
11) Acetonitrile	4.20	41	7196	0.118	ng		100
12) Acrolein	4.38	56	2887	0.183	ng		97
13) Acetone	4.61	58	19352	0.936	ng		94
14) Trichlorofluoromethane	4.76	101	5615	0.121	ng		94
15) 2-Propanol (Isopropanol)	5.28	45	18182	0.301	ng		89
16) Acrylonitrile	5.40	53	3833	0.105	ng		95
17) 1,1-Dichloroethene	5.78	96	3149	0.126	ng		98
18) 2-Methyl-2-Propanol (t...	6.25	59	16633	0.233	ng	#	65
19) Methylene Chloride	6.09	84	6728	0.245	ng		96
20) 3-Chloro-1-propene (Al...	6.26	41	6586	0.118	ng		77
21) Trichlorotrifluoroethane	6.57	151	3064	0.126	ng		91
22) Carbon Disulfide	6.18	76	19067	0.196	ng		97
23) trans-1,2-Dichloroethene	7.46	61	4289	0.111	ng		96
24) 1,1-Dichloroethane	7.71	63	5485	0.112	ng		91
25) Methyl tert-Butyl Ether	7.94	73	8832	0.103	ng		100
26) Vinyl Acetate	8.12	86	3926	0.485	ng	#	77
27) 2-Butanone (MEK)	8.38	72	2391	0.115	ng	#	70
28) cis-1,2-Dichloroethene	8.76	61	4153	0.115	ng		99
29) Diisopropyl Ether	9.17	87	2509m	0.096	ng		
30) Ethyl Acetate	9.20	61	2271	0.231	ng		99
31) n-Hexane	9.06	57	6019	0.119	ng		98
32) Chloroform	9.10	83	5614	0.124	ng		94
34) Tetrahydrofuran (THF)	9.55	72	2264	0.124	ng	#	1
35) Ethyl tert-Butyl Ether	9.73	87	3985	0.111	ng	#	89
36) 1,2-Dichloroethane	9.85	62	3834	0.110	ng		88
38) 1,1,1-Trichloroethane	10.08	97	4786	0.116	ng		94
39) Isopropyl Acetate	10.66	61	4122	0.245	ng		98
40) 1-Butanol	10.72	56	6041	0.212	ng		96
41) Benzene	10.53	78	18408	0.164	ng		97
42) Carbon Tetrachloride	10.68	117	3734	0.108	ng		99
43) Cyclohexane	10.78	84	10612	0.243	ng		93
44) tert-Amyl Methyl Ether	11.21	73	9536	0.116	ng		97
45) 1,2-Dichloropropane	11.34	63	3316	0.124	ng		90

GD 11/20/13
11/21/13

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

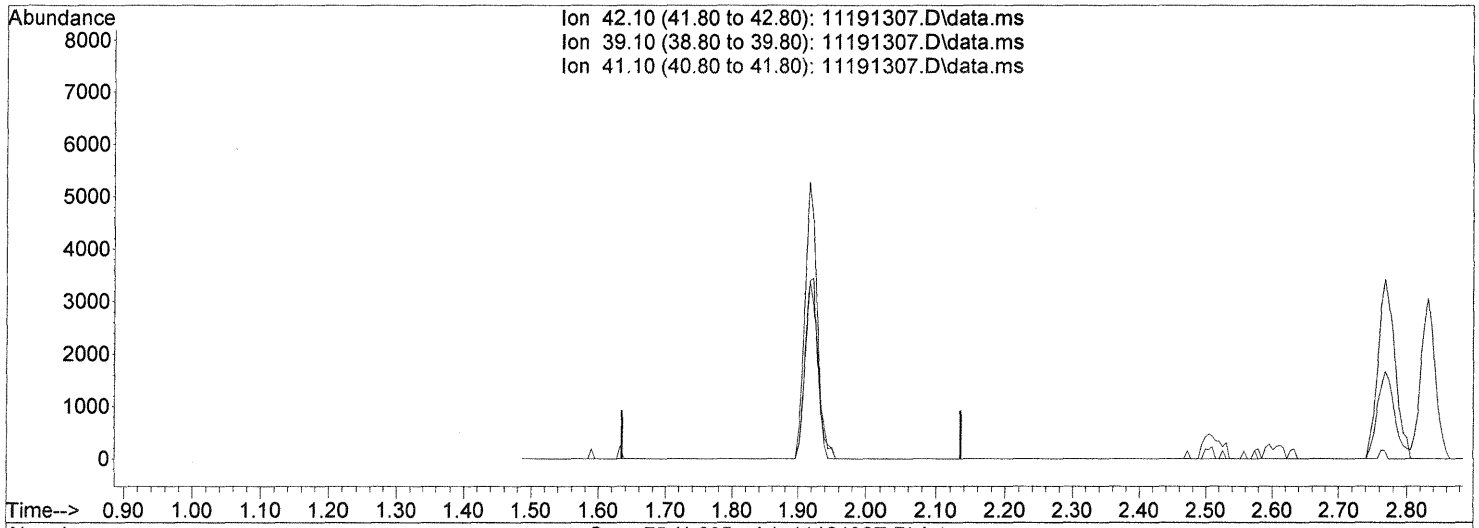
Quant Time: Nov 20 07:19:39 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

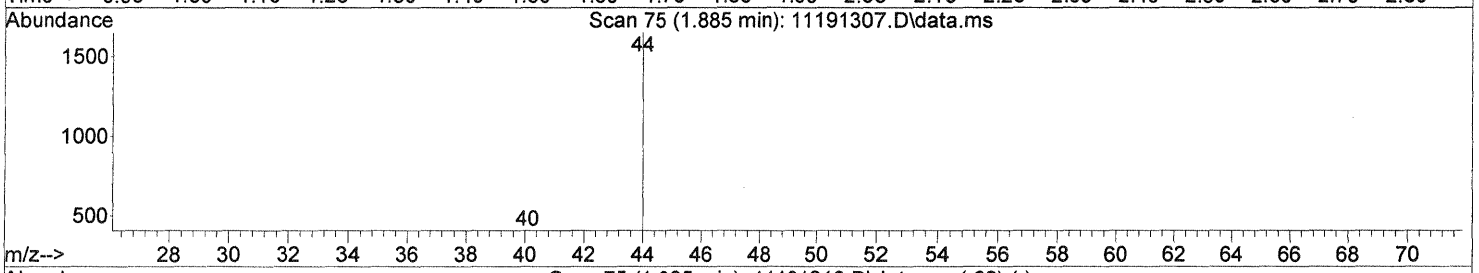
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
46) Bromodichloromethane	11.53	83	4107	0.120 ng		93
47) Trichloroethene	11.57	130	3885	0.127 ng		96
48) 1,4-Dioxane	11.64	88	2268	0.112 ng	#	50
49) 2,2,4-Trimethylpentane...	11.65	57	15023	0.119 ng		99
50) Methyl Methacrylate	11.86	100	3034	0.236 ng		95
51) n-Heptane	11.93	71	3571	0.120 ng		98
52) cis-1,3-Dichloropropene	12.41	75	4561	0.108 ng		98
53) 4-Methyl-2-pentanone	12.48	58	3716	0.139 ng	#	83
54) trans-1,3-Dichloropropene	12.89	75	4110	0.106 ng		97
55) 1,1,2-Trichloroethane	13.02	97	3147	0.126 ng		98
58) Toluene	13.23	91	14266	0.128 ng		99
59) 2-Hexanone	13.50	43	7722	0.118 ng		97
60) Dibromochloromethane	13.55	129	3128	0.108 ng		99
61) 1,2-Dibromoethane	13.74	107	3585	0.126 ng		85
62) n-Butyl Acetate	14.00	43	8576	0.122 ng		99
63) n-Octane	14.05	57	2851	0.110 ng		97
64) Tetrachloroethene	14.10	166	3975	0.110 ng		98
65) Chlorobenzene	14.59	112	9133	0.126 ng		96
66) Ethylbenzene	14.86	91	16255	0.131 ng		96
67) m- & p-Xylenes	14.98	91	24998	0.253 ng		96
68) Bromoform	15.01	173	3076	0.115 ng		86
69) Styrene	15.23	104	9545	0.127 ng		99
70) o-Xylene	15.30	91	11982	0.117 ng		99
71) n-Nonane	15.49	43	7442	0.115 ng		93
72) 1,1,2,2-Tetrachloroethane	15.30	83	4763	0.103 ng		95
74) Cumene	15.72	105	16177	0.121 ng		98
75) alpha-Pinene	15.98	93	7987	0.127 ng	#	47
76) n-Propylbenzene	16.07	91	18007	0.115 ng		97
77) 3-Ethyltoluene	16.14	105	16023	0.118 ng		97
78) 4-Ethyltoluene	16.17	105	14311	0.125 ng		100
79) 1,3,5-Trimethylbenzene	16.23	105	12622	0.120 ng		96
80) alpha-Methylstyrene	16.34	118	6347	0.125 ng		93
81) 2-Ethyltoluene	16.36	105	14805	0.120 ng		98
82) 1,2,4-Trimethylbenzene	16.52	105	12872	0.121 ng		95
83) n-Decane	16.61	57	7139	0.116 ng		96
84) Benzyl Chloride	16.60	91	9175	0.103 ng		96
85) 1,3-Dichlorobenzene	16.61	146	7938	0.125 ng		99
86) 1,4-Dichlorobenzene	16.67	146	8007	0.124 ng		98
87) sec-Butylbenzene	16.71	105	17022	0.123 ng		98
88) 4-Isopropyltoluene (p-...	16.83	119	16283	0.118 ng		94
89) 1,2,3-Trimethylbenzene	16.82	105	13789	0.127 ng		92
90) 1,2-Dichlorobenzene	16.92	146	7580	0.127 ng		97
91) d-Limonene	16.94	68	4679	0.127 ng		93
92) 1,2-Dibromo-3-Chloropr...	17.25	157	2276	0.100 ng		81
93) n-Undecane	17.56	57	6795	0.105 ng		97
94) 1,2,4-Trichlorobenzene	18.27	180	6505	0.141 ng		96
95) Naphthalene	18.35	128	17970	0.132 ng		98
96) n-Dodecane	18.41	57	7227	0.125 ng		99
97) Hexachlorobutadiene	18.66	225	3882	0.124 ng		96
98) Cyclohexanone	15.09	55	4866	0.135 ng		97
99) tert-Butylbenzene	16.52	119	13449	0.126 ng		99
100) n-Butylbenzene	17.15	91	13773	0.132 ng		95

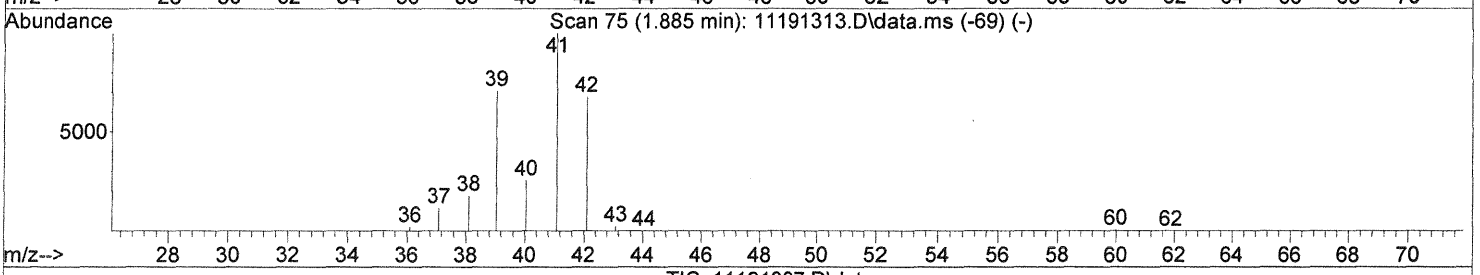
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:05 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191307.D\data.ms

(2) Propene (T)

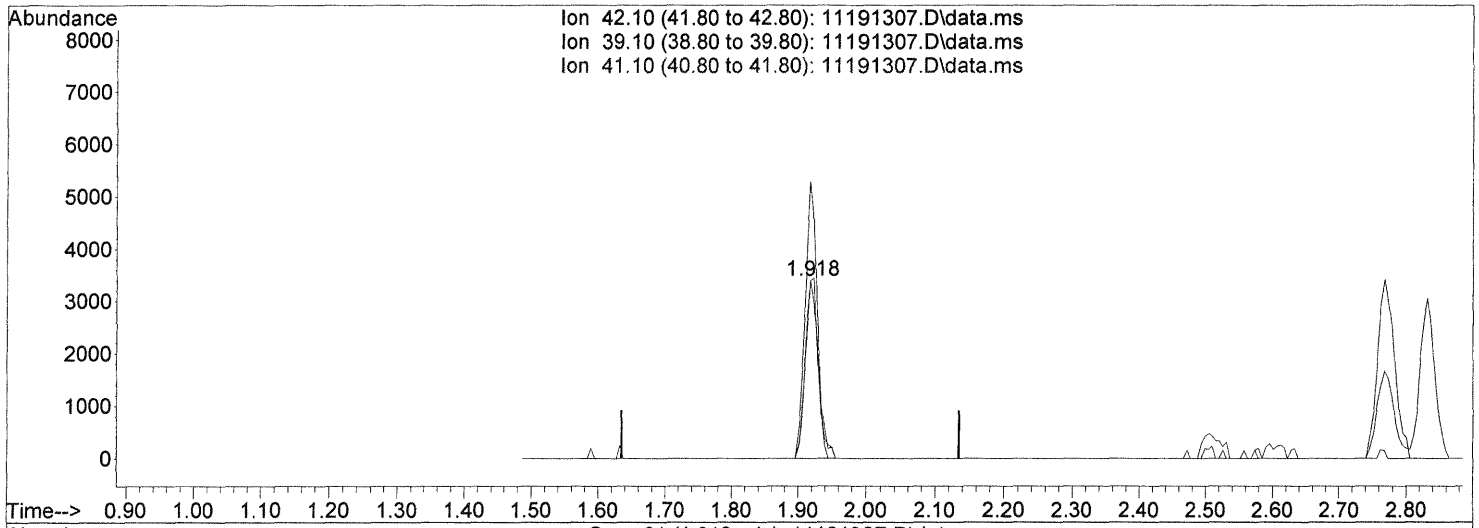
1.885min (-1.885) 0.00ng

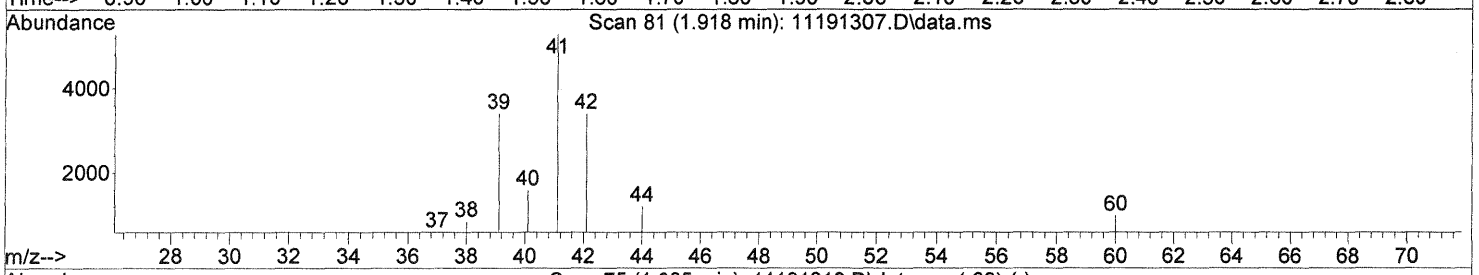
response 0

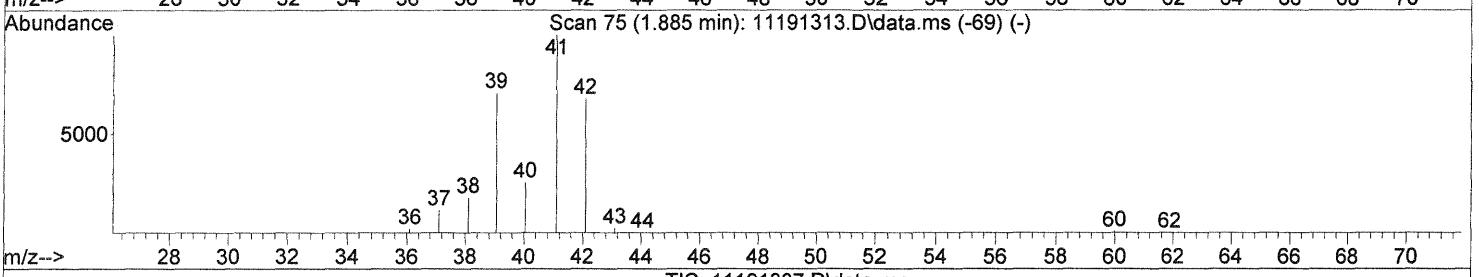
Ion	Exp%	Act%
42.10	100	0.00
39.10	105.90	0.00#
41.10	149.10	0.00#
0.00	0.00	0.00

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:05 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191307.D\data.ms

(2) Propene (T)

1.918min (+0.032) 0.13ng m

response 4346

Ion	Exp%	Act%
42.10	100	100
39.10	105.90	0.00#
41.10	149.10	0.00#
0.00	0.00	0.00

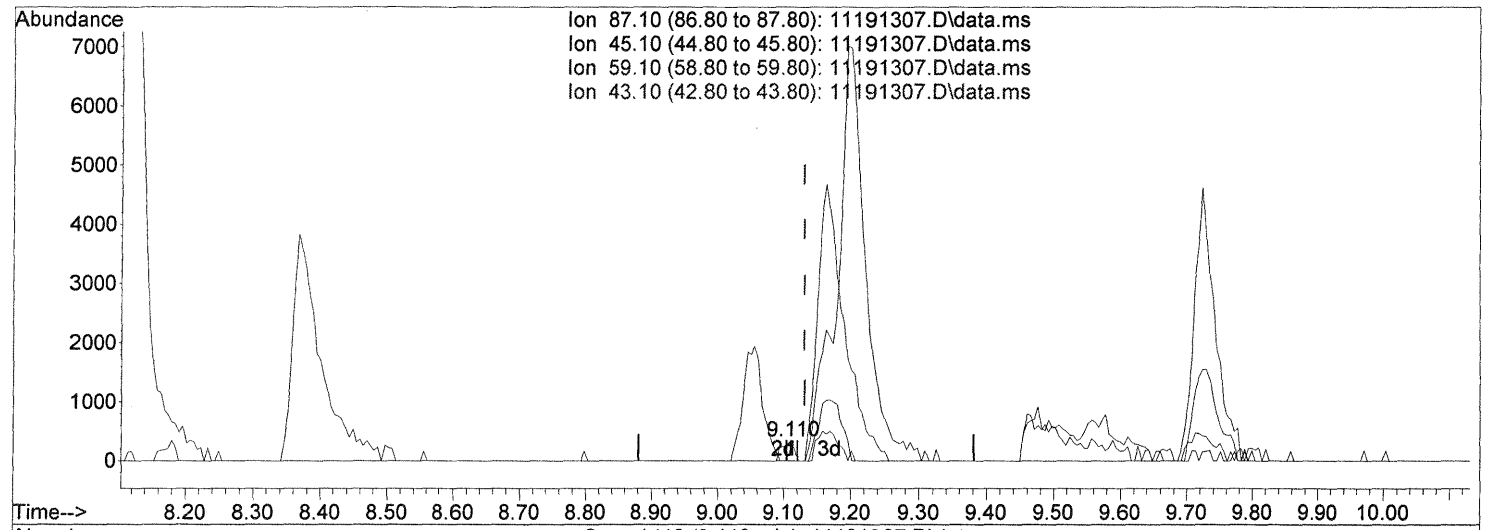
MP
CD 11/20/13

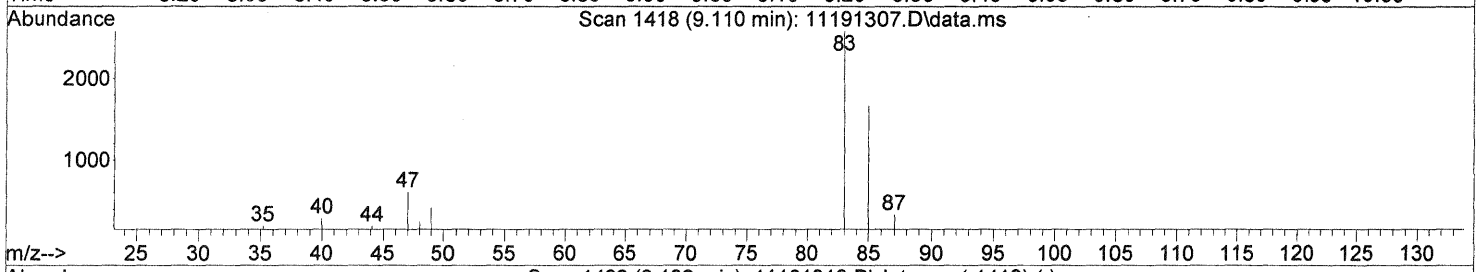
11/21/13

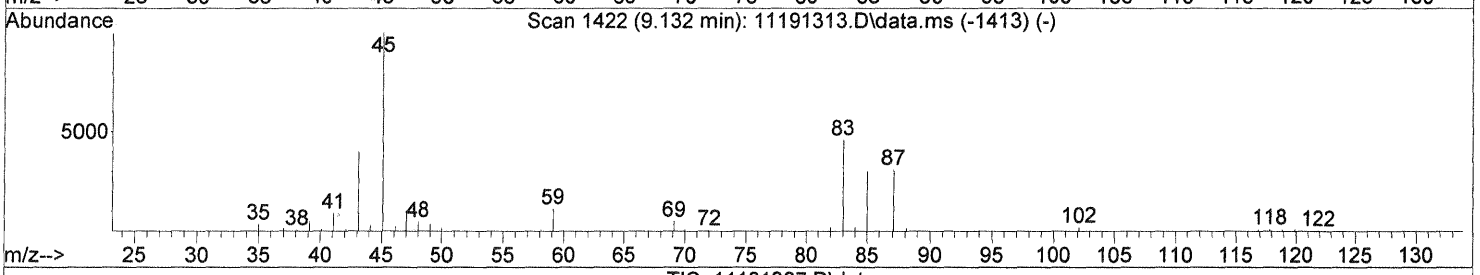
11/22/13

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:05 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191307.D\data.ms

(29) Diisopropyl Ether (T)

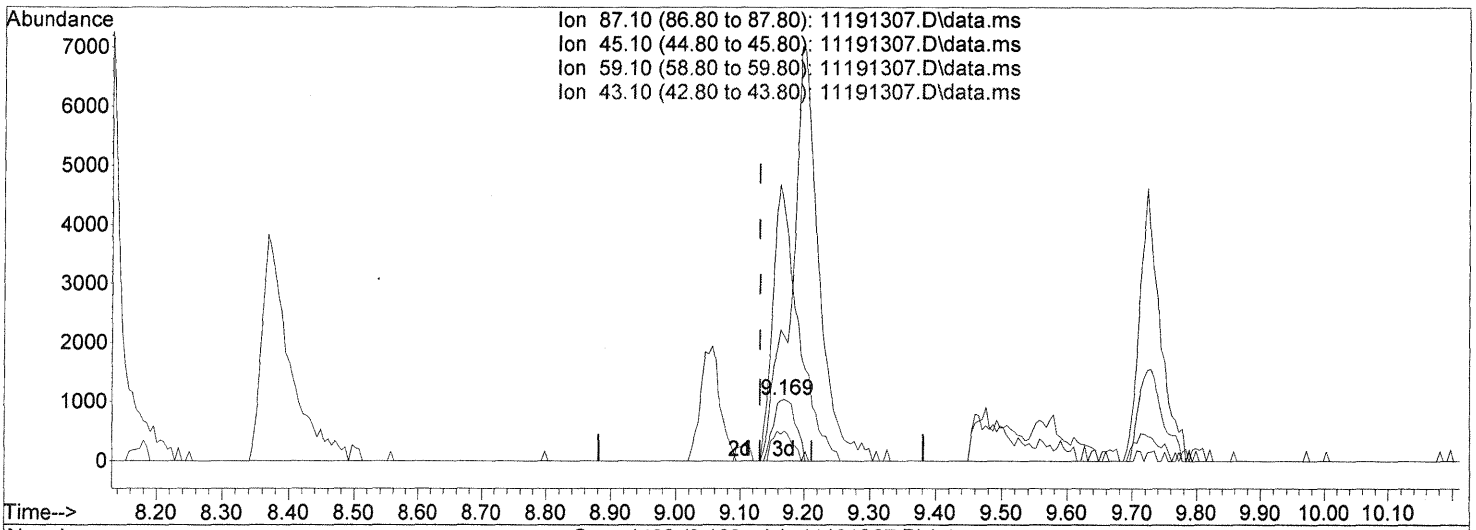
9.110min (-0.021) 0.01ng

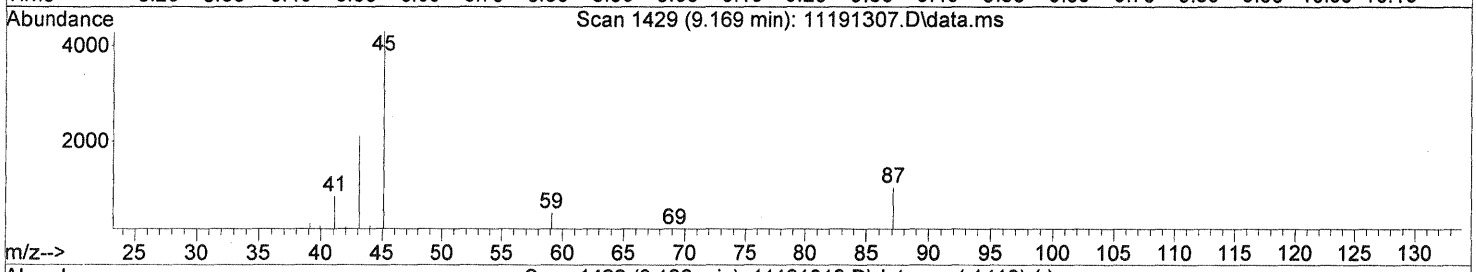
response 176

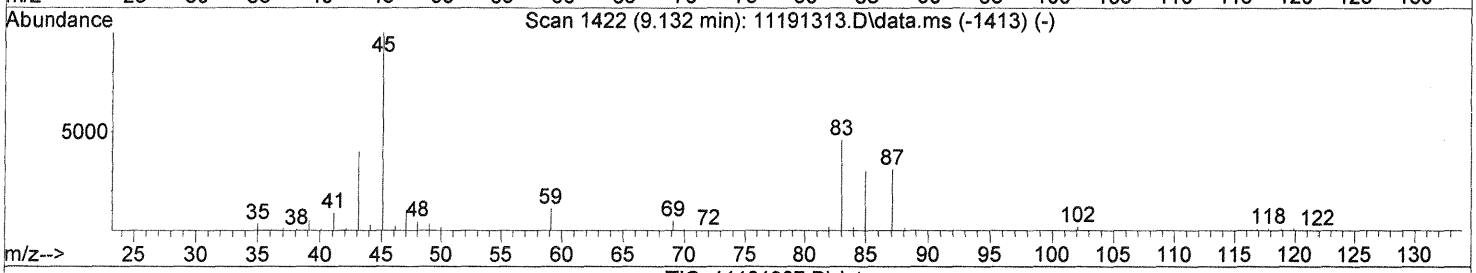
Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

Data File: I:\MS08\Data\2013_11\19\11191307.D
Acq On : 19 Nov 2013 14:07 Operator: EM/CD
Sample : 0.08ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:05 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191307.D\data.ms

(29) Diisopropyl Ether (T)

9.169min (+0.038) 0.10ng m

response 2509

Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

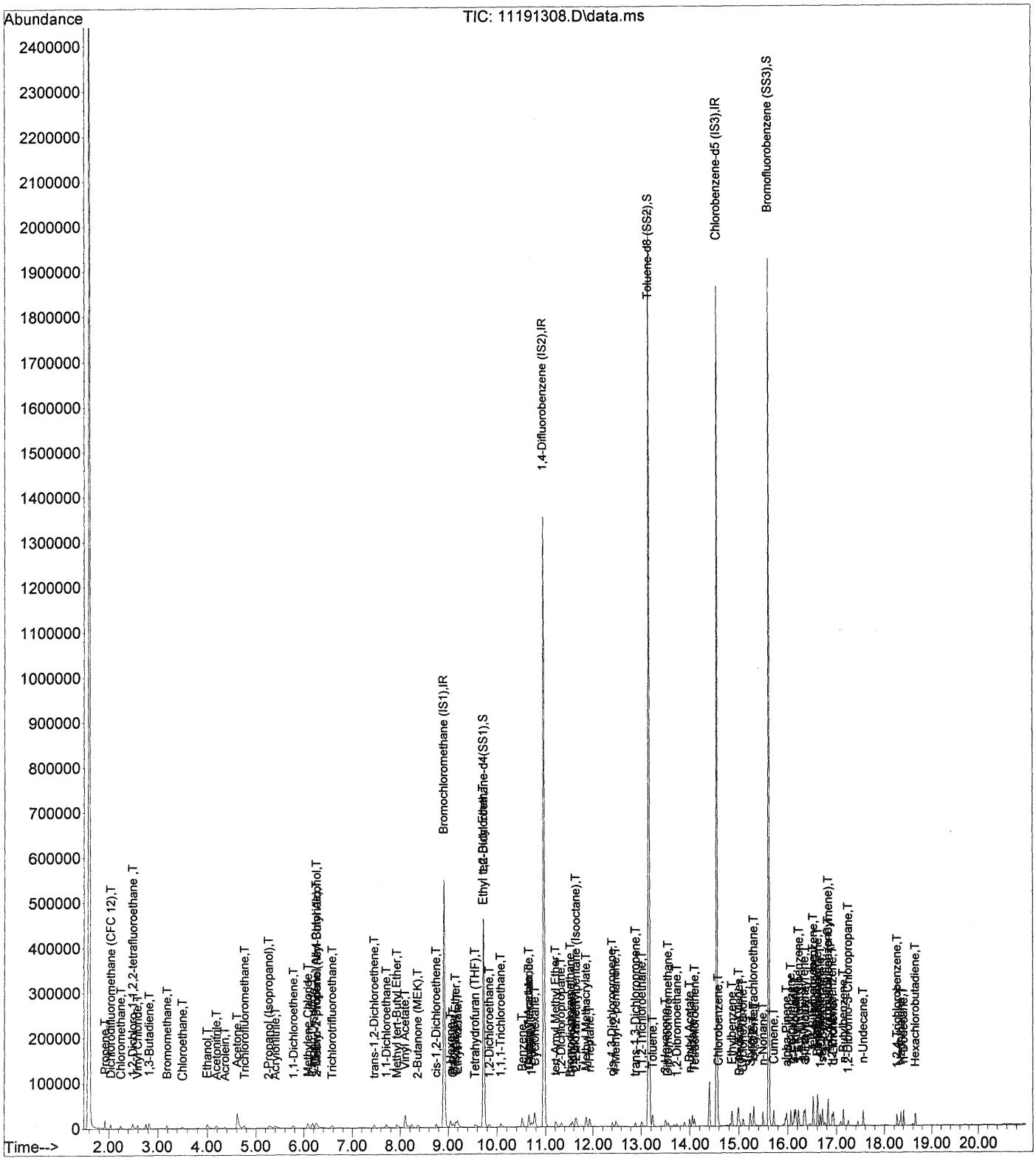
MP
CD 11/20/13

11/21/13

11/22/13

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 21 09:14:48 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 21 09:14:48 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	233212	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	1182506	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	466188	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	9.73	65	323071	11.686	ng	-0.01
Spiked Amount 12.500			Recovery	=	93.52%	
57) Toluene-d8 (SS2)	13.15	98	1241863	12.574	ng	0.00
Spiked Amount 12.500			Recovery	=	100.56%	
73) Bromofluorobenzene (SS3)	15.61	174	503692	12.747	ng	0.00
Spiked Amount 12.500			Recovery	=	102.00%	

Target Compounds							Qvalue
2) Propene	1.92	42	4612	0.147	ng		92
3) Dichlorodifluoromethan...	2.04	85	6947	0.154	ng		96
4) Chloromethane	2.25	50	5343	0.199	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	4040	0.163	ng		94
6) Vinyl Chloride	2.60	62	5410	0.161	ng		94
7) 1,3-Butadiene	2.83	54	5188	0.214	ng		96
8) Bromomethane	3.19	94	4950	0.238	ng		92
9) Chloroethane	3.51	64	3146	0.167	ng		93
10) Ethanol	4.00	45	13330	0.843	ng		99
11) Acetonitrile	4.19	41	7678	0.139	ng		99
12) Acrolein	4.37	56	2940	0.207	ng		96
13) Acetone	4.61	58	20678	1.112	ng		96
14) Trichlorofluoromethane	4.76	101	6282	0.150	ng		94
15) 2-Propanol (Isopropanol)	5.27	45	19883	0.366	ng		95
16) Acrylonitrile	5.40	53	4350	0.133	ng		99
17) 1,1-Dichloroethene	5.78	96	3877	0.172	ng		97
18) 2-Methyl-2-Propanol (t...	6.26	59	19733	0.307	ng	#	64
19) Methylene Chloride	6.09	84	6969	0.282	ng		97
20) 3-Chloro-1-propene (Al...	6.26	41	8542	0.170	ng		82
21) Trichlorotrifluoroethane	6.58	151	3546	0.162	ng		98
22) Carbon Disulfide	6.18	76	22445	0.257	ng		99
23) trans-1,2-Dichloroethene	7.46	61	5198	0.149	ng		93
24) 1,1-Dichloroethane	7.71	63	6878	0.156	ng		99
25) Methyl tert-Butyl Ether	7.93	73	11596	0.151	ng		99
26) Vinyl Acetate	8.10	86	5091	0.699	ng	#	89
27) 2-Butanone (MEK)	8.37	72	2921	0.156	ng	#	75
28) cis-1,2-Dichloroethene	8.76	61	5231	0.160	ng		93
29) Diisopropyl Ether	9.16	87	3319m	0.141	ng		
30) Ethyl Acetate	9.20	61	2728	0.308	ng		96
31) n-Hexane	9.05	57	7409	0.163	ng		97
32) Chloroform	9.10	83	6628	0.163	ng		97
34) Tetrahydrofuran (THF)	9.56	72	2489m	0.151	ng		
35) Ethyl tert-Butyl Ether	9.72	87	4991	0.154	ng		91
36) 1,2-Dichloroethane	9.85	62	4632	0.147	ng		100
38) 1,1,1-Trichloroethane	10.08	97	5632	0.148	ng		98
39) Isopropyl Acetate	10.66	61	5077	0.329	ng		94
40) 1-Butanol	10.72	56	6608	0.252	ng		92
41) Benzene	10.53	78	18903	0.183	ng		99
42) Carbon Tetrachloride	10.66	117	4556	0.144	ng		95
43) Cyclohexane	10.78	84	12532	0.312	ng		88
44) tert-Amyl Methyl Ether	11.21	73	11578	0.153	ng		97
45) 1,2-Dichloropropane	11.34	63	3951	0.160	ng		98

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

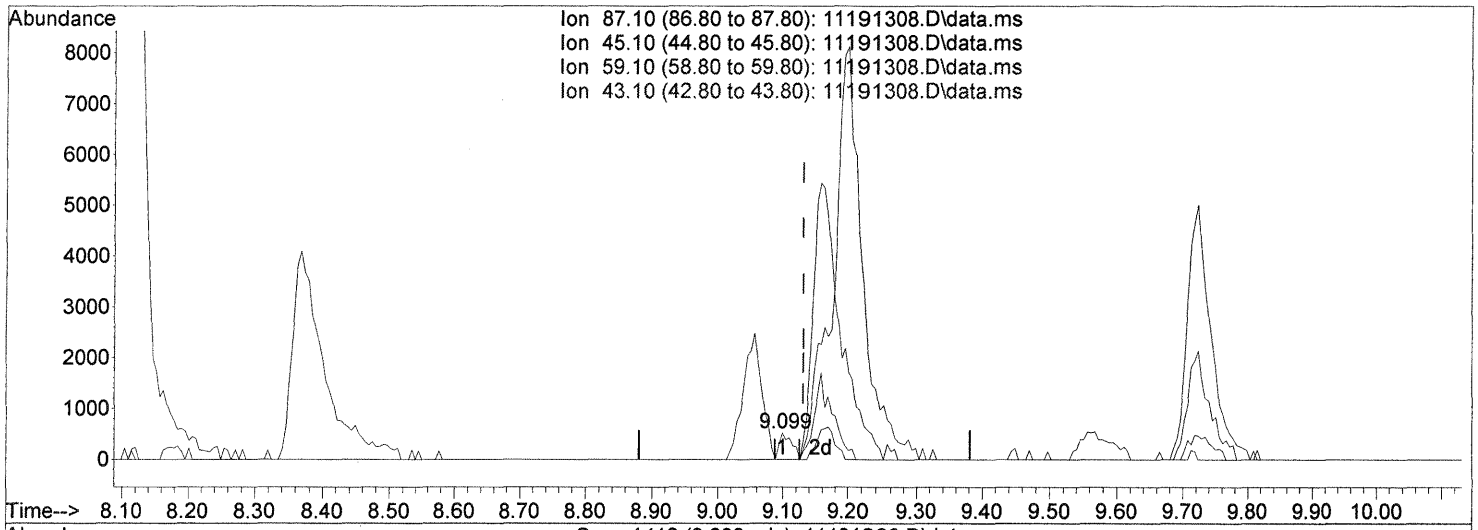
Quant Time: Nov 21 09:14:48 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

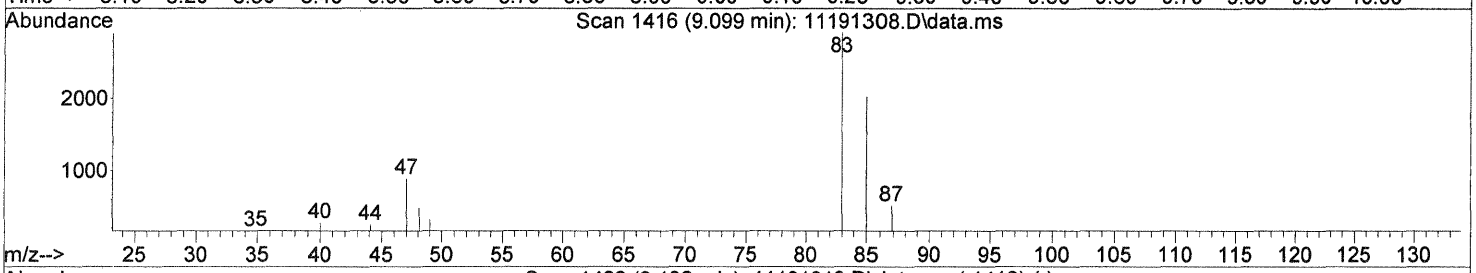
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
46) Bromodichloromethane	11.53	83	4853	0.154	ng		97
47) Trichloroethene	11.57	130	4600	0.163	ng		96
48) 1,4-Dioxane	11.63	88	3404	0.182	ng	#	74
49) 2,2,4-Trimethylpentane...	11.65	57	18160	0.156	ng		100
50) Methyl Methacrylate	11.86	100	3560	0.300	ng		97
51) n-Heptane	11.93	71	4152	0.152	ng		93
52) cis-1,3-Dichloropropene	12.40	75	5509	0.142	ng		98
53) 4-Methyl-2-pentanone	12.48	58	3877	0.157	ng		98
54) trans-1,3-Dichloropropene	12.89	75	5046	0.141	ng		95
55) 1,1,2-Trichloroethane	13.01	97	3537	0.154	ng		95
58) Toluene	13.23	91	17357	0.169	ng		98
59) 2-Hexanone	13.49	43	8960	0.148	ng		98
60) Dibromochloromethane	13.55	129	4103	0.154	ng		95
61) 1,2-Dibromoethane	13.73	107	4064	0.155	ng		91
62) n-Butyl Acetate	13.99	43	10377	0.160	ng		96
63) n-Octane	14.05	57	3603	0.151	ng		98
64) Tetrachloroethene	14.10	166	4828	0.145	ng		98
65) Chlorobenzene	14.59	112	11295	0.169	ng		98
66) Ethylbenzene	14.86	91	18383	0.161	ng		98
67) m- & p-Xylenes	15.00	91	28537	0.313	ng		100
68) Bromoform	15.02	173	3601	0.145	ng		96
69) Styrene	15.23	104	11752	0.170	ng		98
70) o-Xylene	15.30	91	15097	0.159	ng		94
71) n-Nonane	15.49	43	8574	0.143	ng		99
72) 1,1,2,2-Tetrachloroethane	15.30	83	6269	0.147	ng		97
74) Cumene	15.72	105	19242	0.156	ng		97
75) alpha-Pinene	15.98	93	9759	0.168	ng		99
76) n-Propylbenzene	16.07	91	21819	0.151	ng		98
77) 3-Ethyltoluene	16.14	105	19274	0.153	ng		97
78) 4-Ethyltoluene	16.17	105	17096	0.162	ng		97
79) 1,3,5-Trimethylbenzene	16.23	105	15269	0.157	ng		99
80) alpha-Methylstyrene	16.33	118	7991	0.170	ng		95
81) 2-Ethyltoluene	16.36	105	18310	0.160	ng		98
82) 1,2,4-Trimethylbenzene	16.52	105	15705	0.160	ng		97
83) n-Decane	16.61	57	8275	0.146	ng		98
84) Benzyl Chloride	16.60	91	11408	0.139	ng		94
85) 1,3-Dichlorobenzene	16.61	146	9068	0.154	ng		97
86) 1,4-Dichlorobenzene	16.67	146	9671	0.162	ng		98
87) sec-Butylbenzene	16.71	105	20232	0.159	ng		99
88) 4-Isopropyltoluene (p-...	16.83	119	19560	0.153	ng		94
89) 1,2,3-Trimethylbenzene	16.82	105	15875	0.158	ng		99
90) 1,2-Dichlorobenzene	16.92	146	9255	0.168	ng		96
91) d-Limonene	16.94	68	5754	0.169	ng		97
92) 1,2-Dibromo-3-Chloropr...	17.24	157	3075	0.146	ng		92
93) n-Undecane	17.56	57	8387	0.140	ng		96
94) 1,2,4-Trichlorobenzene	18.27	180	7577	0.178	ng		97
95) Naphthalene	18.35	128	20758	0.166	ng		99
96) n-Dodecane	18.41	57	8488	0.160	ng		97
97) Hexachlorobutadiene	18.65	225	4628	0.160	ng		100
98) Cyclohexanone	15.08	55	5709	0.172	ng		96
99) tert-Butylbenzene	16.51	119	15886	0.161	ng		98
100) n-Butylbenzene	17.15	91	16184	0.168	ng		96

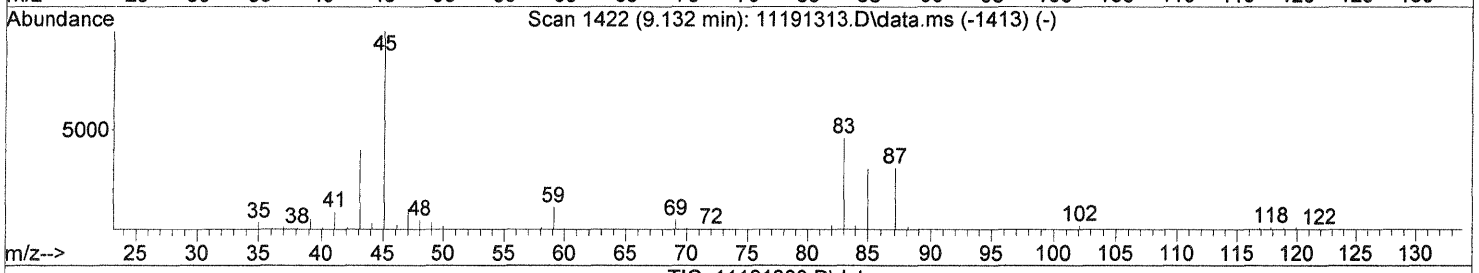
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:10 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191308.D\data.ms

(29) Diisopropyl Ether (T)

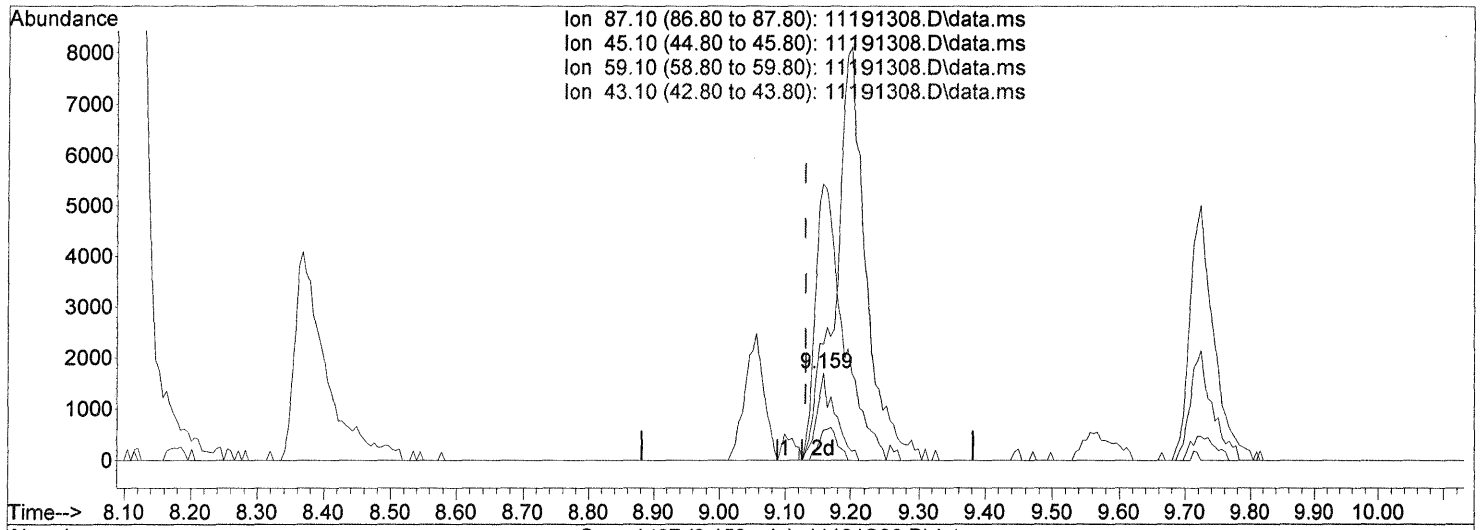
9.099min (-0.032) 0.03ng

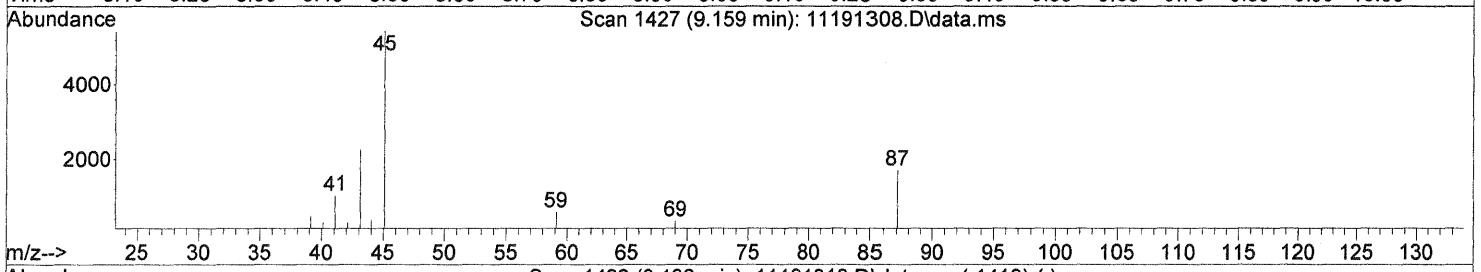
response 686

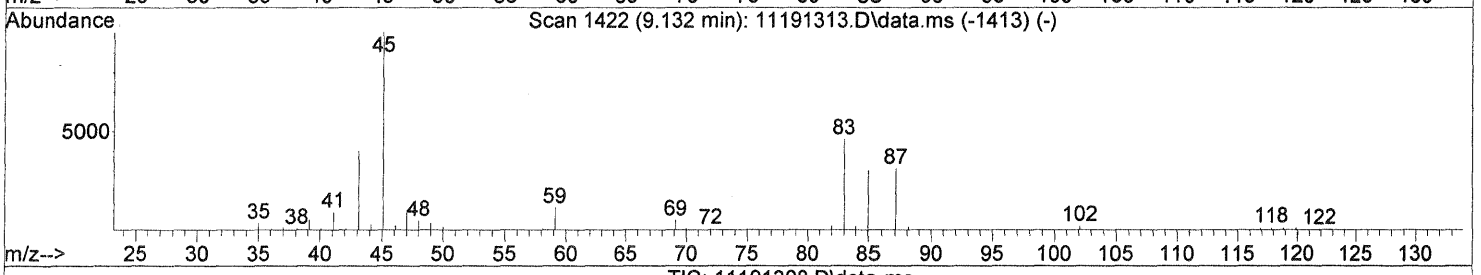
Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:10 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191308.D\data.ms

(29) Diisopropyl Ether (T)

9.159min (+0.027) 0.14ng m

response 3319

Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

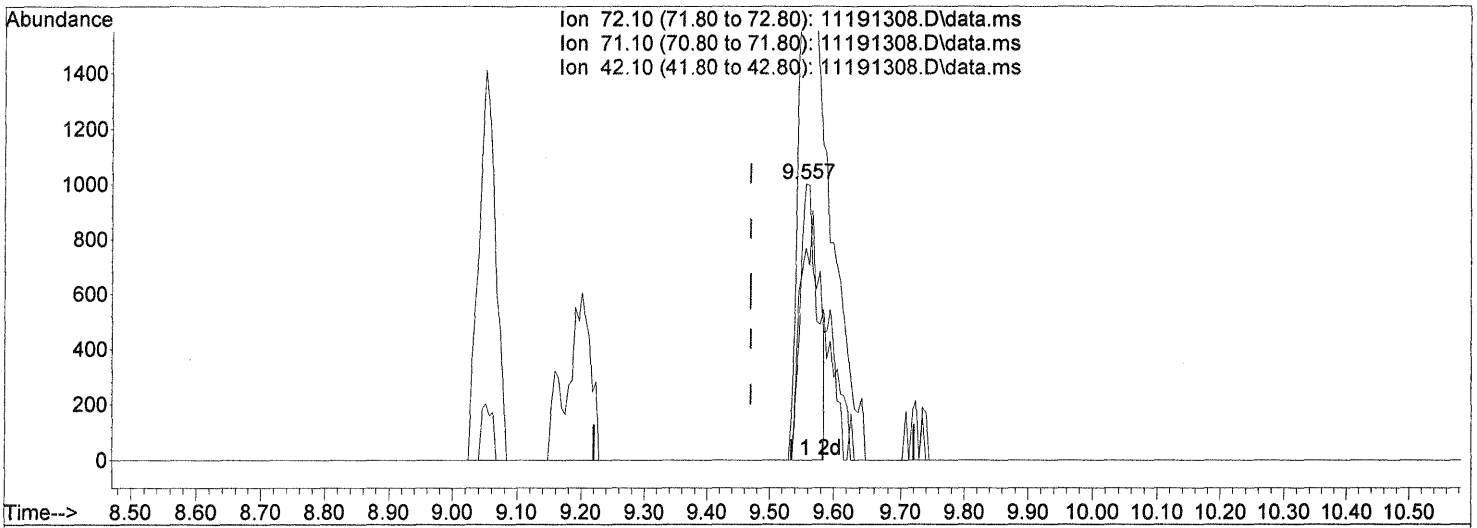
MP
CD 11/20/13

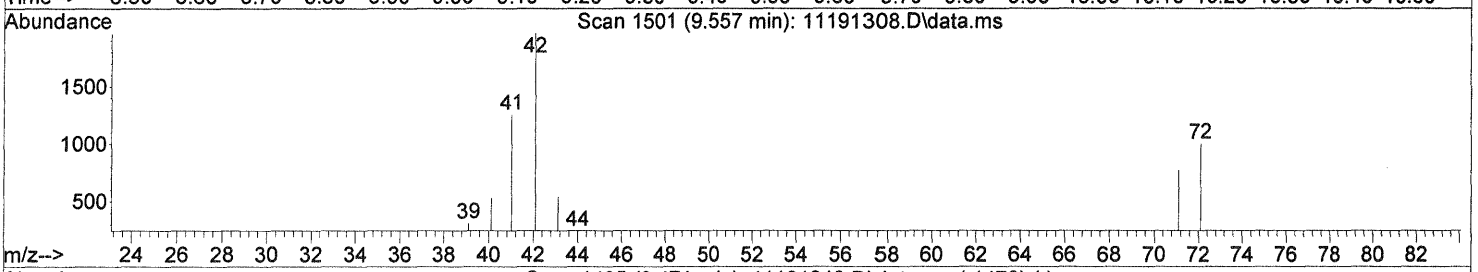
11/21/13

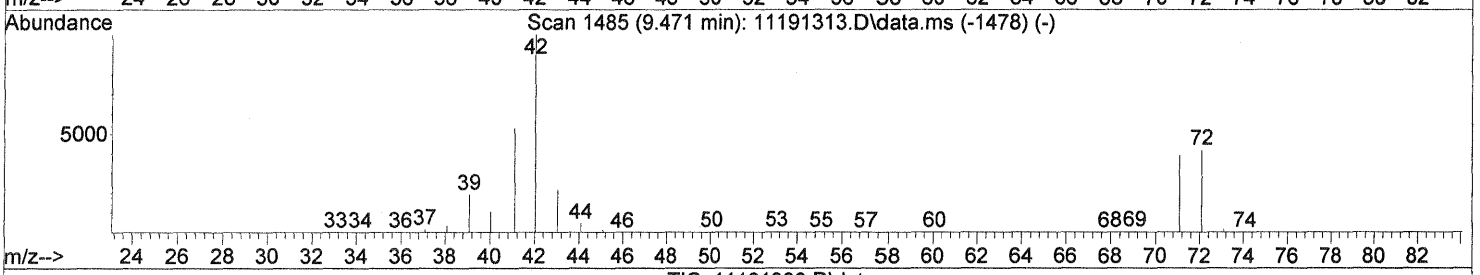
EM 11/22/13

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:32:45 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191308.D\data.ms

(34) Tetrahydrofuran (THF) (T)

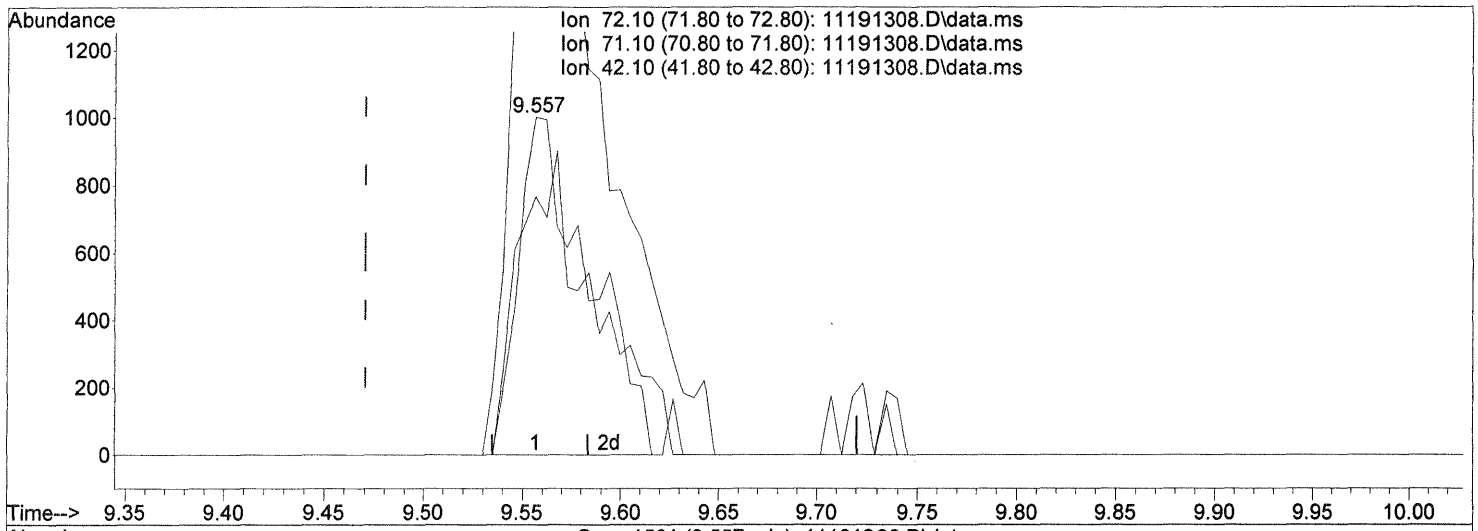
9.557min (+0.086) 0.12ng

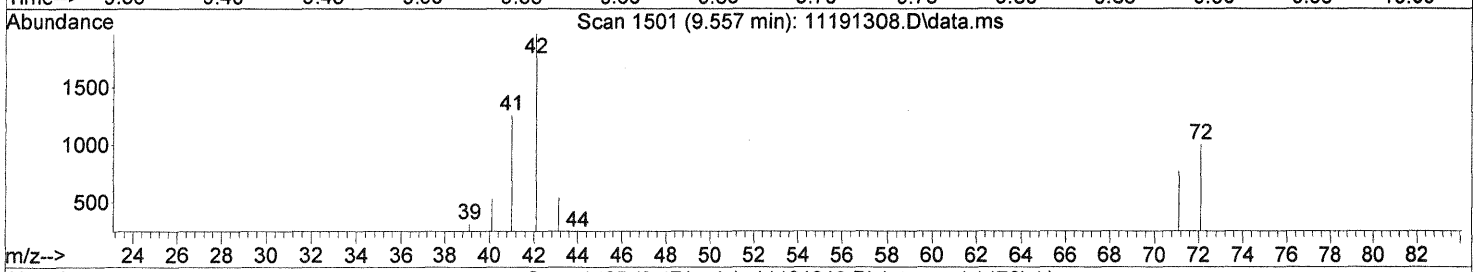
response 1898

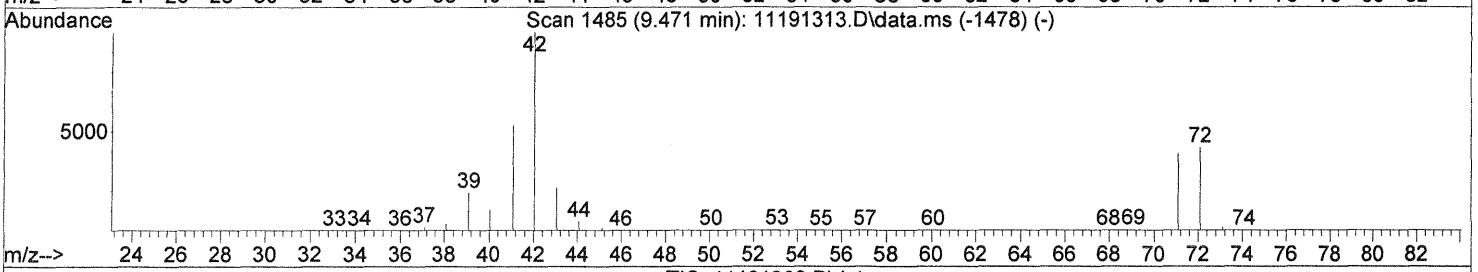
Ion	Exp%	Act%
72.10	100	100
71.10	93.50	128.13#
42.10	240.80	332.88#
0.00	0.00	0.00

Data File: I:\MS08\Data\2013_11\19\11191308.D
Acq On : 19 Nov 2013 14:36 Operator: EM/CD
Sample : 0.1ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:32:45 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191308.D\data.ms

(34) Tetrahydrofuran (THF) (T)

9.557min (+0.086) 0.15ng m

response 2489

Ion	Exp%	Act%
72.10	100	100
71.10	93.50	97.71
42.10	240.80	253.84
0.00	0.00	0.00

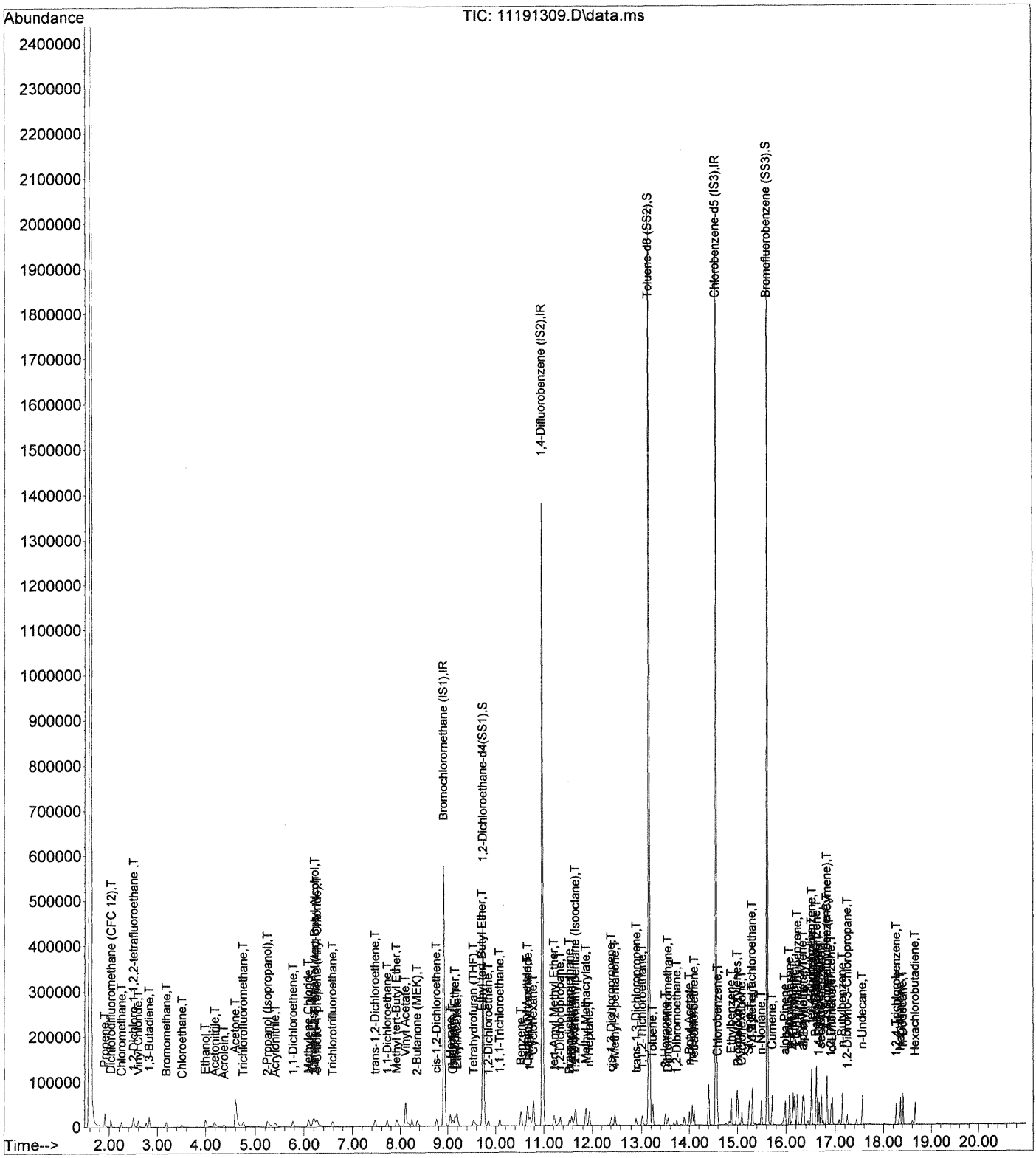
SP
CD 11/21/13

11/21/13
EM 11/22/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 21 09:16:10 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 21 09:16:10 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	242944	12.500 ng	-0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	1212568	12.500 ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	477299	12.500 ng	0.00
System Monitoring Compounds					
33) 1,2-Dichloroethane-d4(...	9.73	65	332334	11.539 ng	-0.01
Spiked Amount 12.500			Recovery =	92.32%	
57) Toluene-d8 (SS2)	13.15	98	1273997	12.599 ng	0.00
Spiked Amount 12.500			Recovery =	100.80%	
73) Bromofluorobenzene (SS3)	15.61	174	514728	12.723 ng	0.00
Spiked Amount 12.500			Recovery =	101.76%	
Target Compounds					Qvalue
2) Propene	1.91	42	8205	0.252 ng	100
3) Dichlorodifluoromethan...	2.04	85	12640	0.269 ng	100
4) Chloromethane	2.25	50	10078	0.360 ng	97
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	7754	0.300 ng	96
6) Vinyl Chloride	2.60	62	10195	0.290 ng	99
7) 1,3-Butadiene	2.83	54	9057	0.359 ng	99
8) Bromomethane	3.19	94	7732	0.357 ng	99
9) Chloroethane	3.51	64	5551	0.283 ng	99
10) Ethanol	3.99	45	27030	1.640 ng	92
11) Acetonitrile	4.19	41	13448	0.234 ng	100
12) Acrolein	4.37	56	5250	0.355 ng	99
13) Acetone	4.60	58	39327	2.030 ng	95
14) Trichlorofluoromethane	4.76	101	11758	0.270 ng	98
15) 2-Propanol (Isopropanol)	5.24	45	40799	0.721 ng	86
16) Acrylonitrile	5.40	53	9109	0.267 ng	94
17) 1,1-Dichloroethene	5.77	96	6962	0.296 ng	96
18) 2-Methyl-2-Propanol (t...	6.22	59	37360	0.558 ng	78
19) Methylene Chloride	6.09	84	10079	0.391 ng	98
20) 3-Chloro-1-propene (Al...	6.26	41	14563	0.278 ng	89
21) Trichlorotrifluoroethane	6.58	151	6712	0.294 ng	98
22) Carbon Disulfide	6.18	76	34284	0.377 ng	100
23) trans-1,2-Dichloroethene	7.46	61	9613	0.265 ng	99
24) 1,1-Dichloroethane	7.72	63	12751	0.278 ng	99
25) Methyl tert-Butyl Ether	7.92	73	21956	0.274 ng	99
26) Vinyl Acetate	8.10	86	9433	1.243 ng #	80
27) 2-Butanone (MEK)	8.35	72	4985	0.256 ng #	68
28) cis-1,2-Dichloroethene	8.75	61	9579	0.282 ng	95
29) Diisopropyl Ether	9.15	87	6718m	0.274 ng	
30) Ethyl Acetate	9.20	61	5173	0.561 ng	92
31) n-Hexane	9.06	57	13194	0.278 ng	98
32) Chloroform	9.10	83	11742	0.278 ng	100
34) Tetrahydrofuran (THF)	9.54	72	4676m	0.272 ng	
35) Ethyl tert-Butyl Ether	9.71	87	9130	0.270 ng	91
36) 1,2-Dichloroethane	9.85	62	8647	0.264 ng	96
38) 1,1,1-Trichloroethane	10.08	97	10584	0.272 ng	96
39) Isopropyl Acetate	10.65	61	9047	0.571 ng #	68
40) 1-Butanol	10.71	56	13713	0.509 ng	95
41) Benzene	10.52	78	31022	0.293 ng	99
42) Carbon Tetrachloride	10.67	117	8844	0.272 ng	97
43) Cyclohexane	10.78	84	22925	0.557 ng	91
44) tert-Amyl Methyl Ether	11.21	73	21315	0.274 ng	95
45) 1,2-Dichloropropane	11.34	63	7292	0.288 ng	99

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

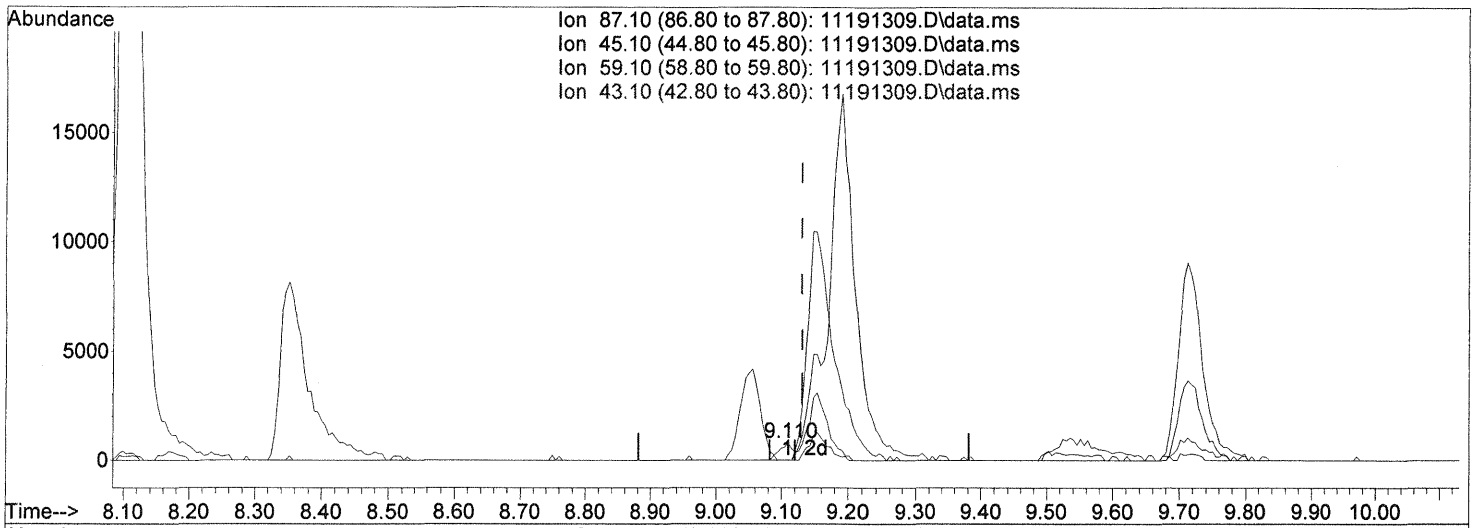
Quant Time: Nov 21 09:16:10 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

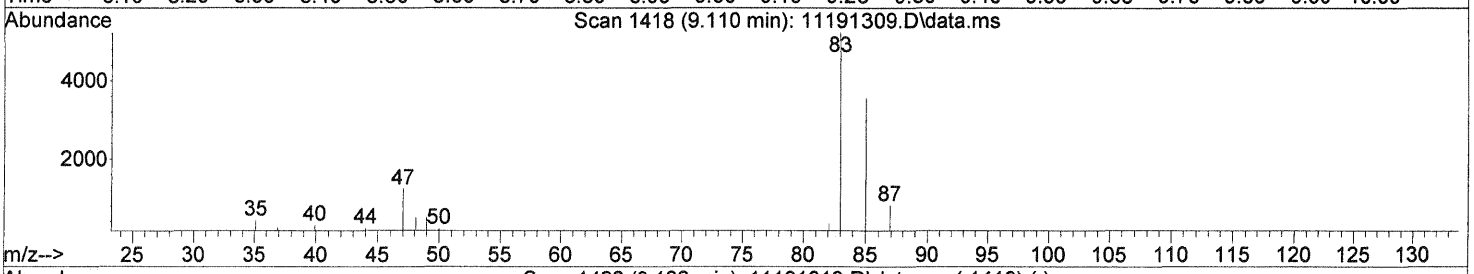
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	8675	0.268 ng	99
47) Trichloroethene	11.57	130	8717	0.302 ng	95
48) 1,4-Dioxane	11.62	88	6389	0.334 ng	76
49) 2,2,4-Trimethylpentane...	11.65	57	34497	0.289 ng	99
50) Methyl Methacrylate	11.86	100	6591	0.542 ng	99
51) n-Heptane	11.93	71	7972	0.284 ng	99
52) cis-1,3-Dichloropropene	12.40	75	10461	0.263 ng	98
53) 4-Methyl-2-pentanone	12.48	58	7392	0.293 ng	96
54) trans-1,3-Dichloropropene	12.89	75	9078	0.248 ng	96
55) 1,1,2-Trichloroethane	13.01	97	6824	0.289 ng	95
58) Toluene	13.23	91	31081	0.295 ng	99
59) 2-Hexanone	13.49	43	17406	0.281 ng	97
60) Dibromochloromethane	13.55	129	7703	0.282 ng	96
61) 1,2-Dibromoethane	13.73	107	8005	0.298 ng	93
62) n-Butyl Acetate	13.99	43	19343	0.291 ng	99
63) n-Octane	14.05	57	6490	0.265 ng	98
64) Tetrachloroethene	14.10	166	9374	0.274 ng	99
65) Chlorobenzene	14.59	112	20834	0.305 ng	100
66) Ethylbenzene	14.87	91	34767	0.297 ng	98
67) m- & p-Xylenes	14.99	91	53972	0.578 ng	96
68) Bromoform	15.01	173	6809	0.269 ng	98
69) Styrene	15.23	104	21471	0.303 ng	98
70) o-Xylene	15.30	91	27563	0.284 ng	97
71) n-Nonane	15.49	43	15899	0.259 ng	97
72) 1,1,2,2-Tetrachloroethane	15.30	83	11678	0.268 ng	100
74) Cumene	15.72	105	35288	0.280 ng	99
75) alpha-Pinene	15.98	93	17598	0.295 ng	98
76) n-Propylbenzene	16.07	91	40814	0.277 ng	97
77) 3-Ethyltoluene	16.14	105	35017	0.272 ng	99
78) 4-Ethyltoluene	16.17	105	32107	0.297 ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	28612	0.288 ng	99
80) alpha-Methylstyrene	16.33	118	15480	0.322 ng	98
81) 2-Ethyltoluene	16.36	105	33023	0.282 ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	28958	0.288 ng	98
83) n-Decane	16.61	57	15996	0.275 ng	96
84) Benzyl Chloride	16.60	91	21385	0.255 ng	95
85) 1,3-Dichlorobenzene	16.61	146	18026	0.299 ng	98
86) 1,4-Dichlorobenzene	16.66	146	18186	0.298 ng	97
87) sec-Butylbenzene	16.71	105	38201	0.293 ng	99
88) 4-Isopropyltoluene (p-...	16.83	119	36962	0.283 ng	96
89) 1,2,3-Trimethylbenzene	16.82	105	29173	0.283 ng	99
90) 1,2-Dichlorobenzene	16.92	146	16892	0.299 ng	99
91) d-Limonene	16.94	68	11035	0.316 ng	96
92) 1,2-Dibromo-3-Chloropr...	17.25	157	5866	0.272 ng	91
93) n-Undecane	17.56	57	15815	0.259 ng	99
94) 1,2,4-Trichlorobenzene	18.27	180	14068	0.323 ng	99
95) Naphthalene	18.35	128	38419	0.299 ng	100
96) n-Dodecane	18.41	57	16716	0.307 ng	96
97) Hexachlorobutadiene	18.65	225	8948	0.302 ng	96
98) Cyclohexanone	15.08	55	10602	0.311 ng	98
99) tert-Butylbenzene	16.51	119	29339	0.290 ng	99
100) n-Butylbenzene	17.15	91	30456	0.310 ng	97

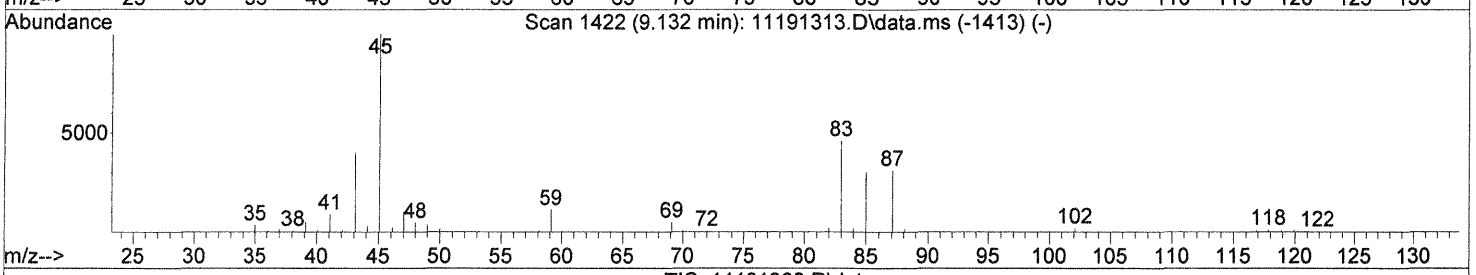
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:17 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191309.D\data.ms

(29) Diisopropyl Ether (T)

9.110min (-0.022) 0.04ng

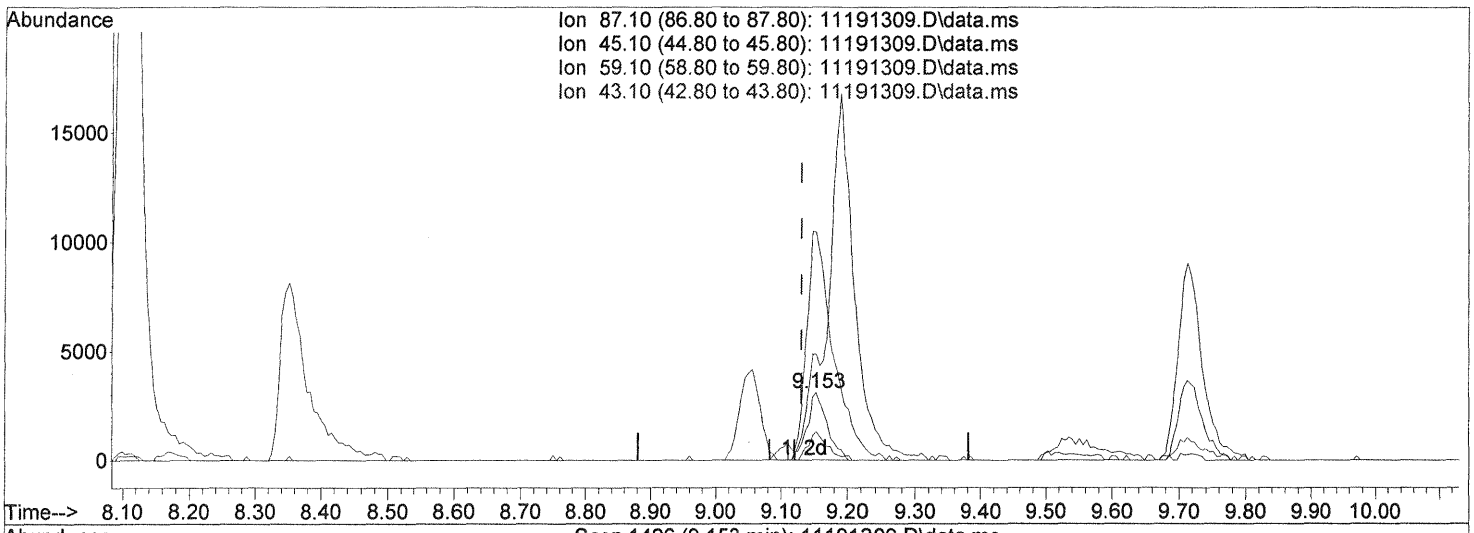
response 1101

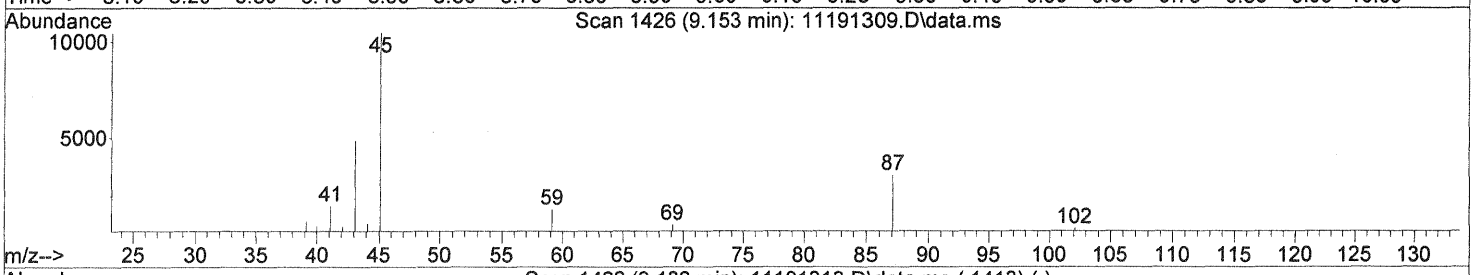
Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

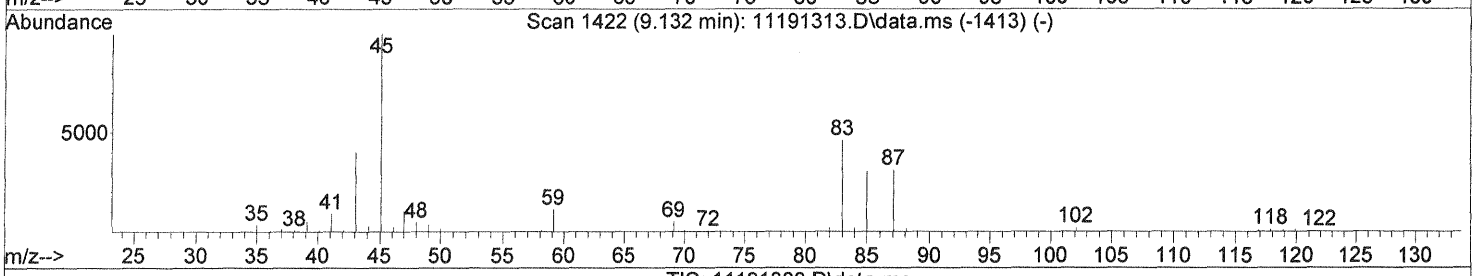
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:17 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191309.D\data.ms

(29) Diisopropyl Ether (T)

9.153min (+0.021) 0.27ng m

response 6718

Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

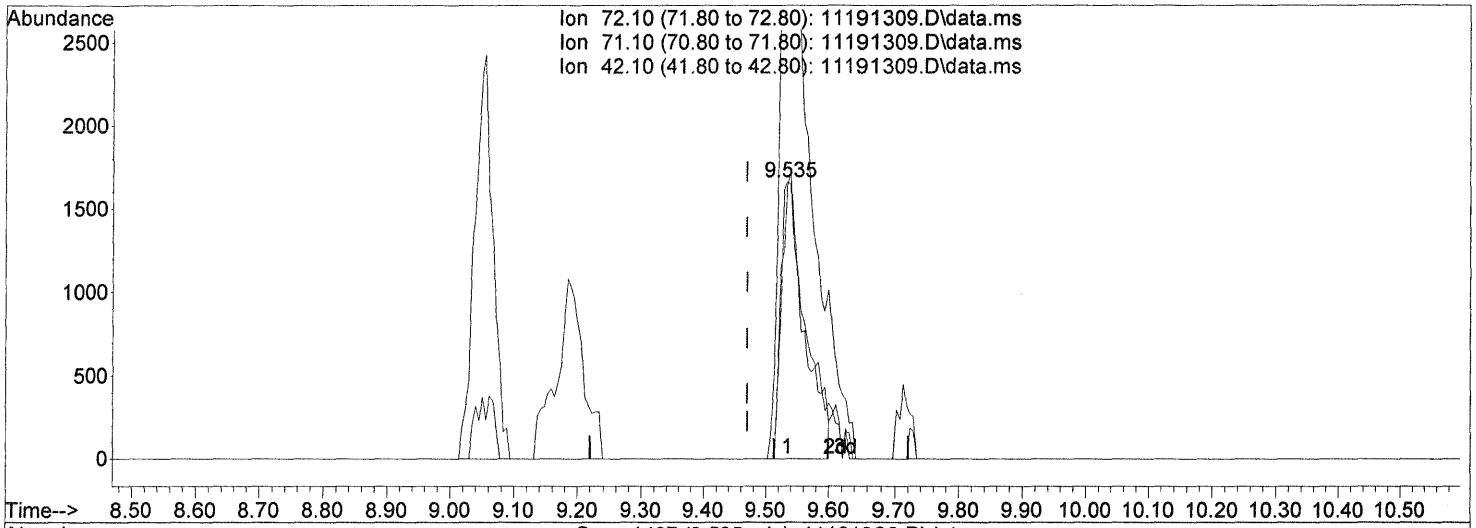
MP
CD 11/20/13

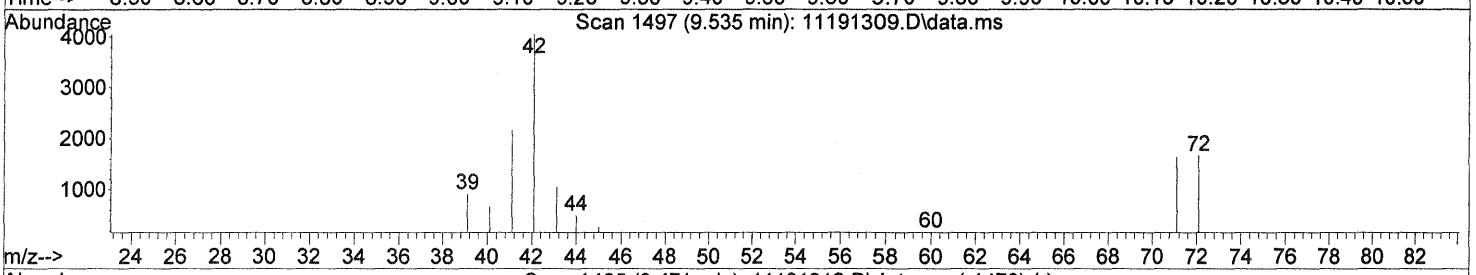
11/21/13

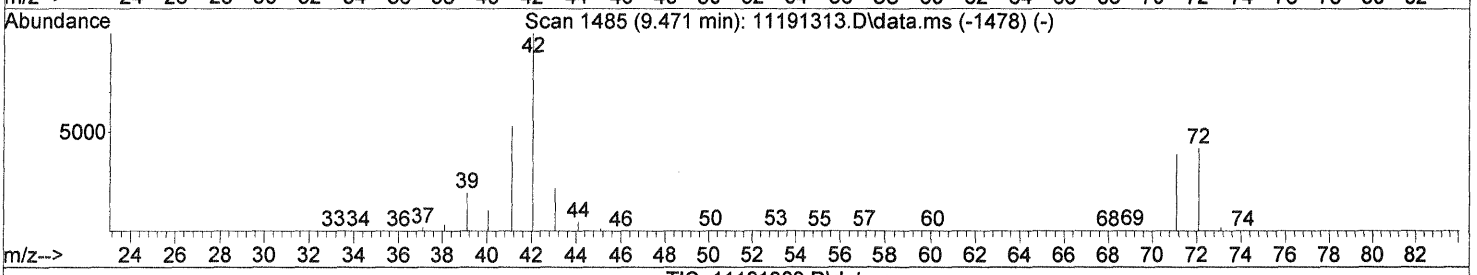
EM 11/22/13

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 08:03:11 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191309.D\data.ms

(34) Tetrahydrofuran (THF) (T)

9.535min (+0.064) 0.26ng

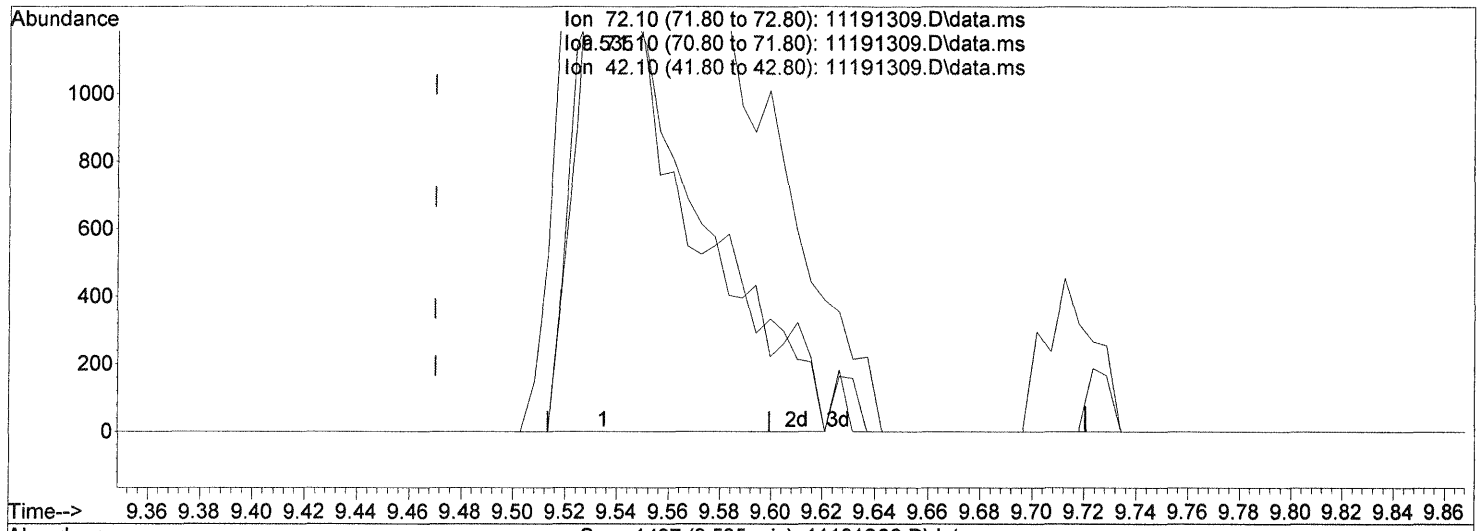
response 4417

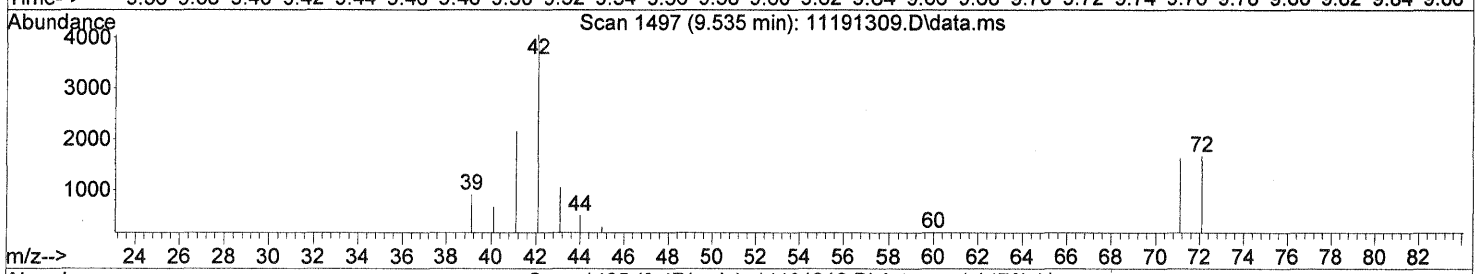
Ion	Exp%	Act%
72.10	100	100
71.10	93.50	103.92
42.10	240.80	283.68#
0.00	0.00	0.00

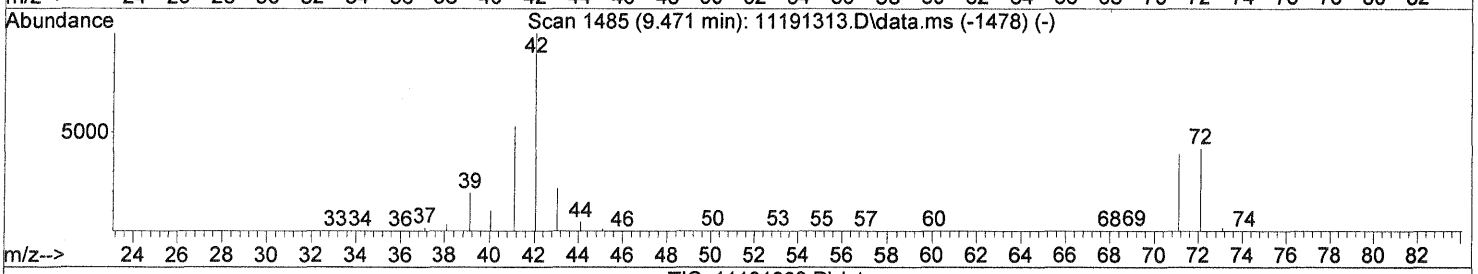
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2013_11\19\11191309.D
Acq On : 19 Nov 2013 15:06 Operator: EM/CD
Sample : 0.2ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 08:03:11 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191309.D\data.ms

(34) Tetrahydrofuran (THF) (T)

9.535min (+0.064) 0.27ng m

response 4676

Ion	Exp%	Act%
72.10	100	100
71.10	93.50	98.16
42.10	240.80	267.96#
0.00	0.00	0.00

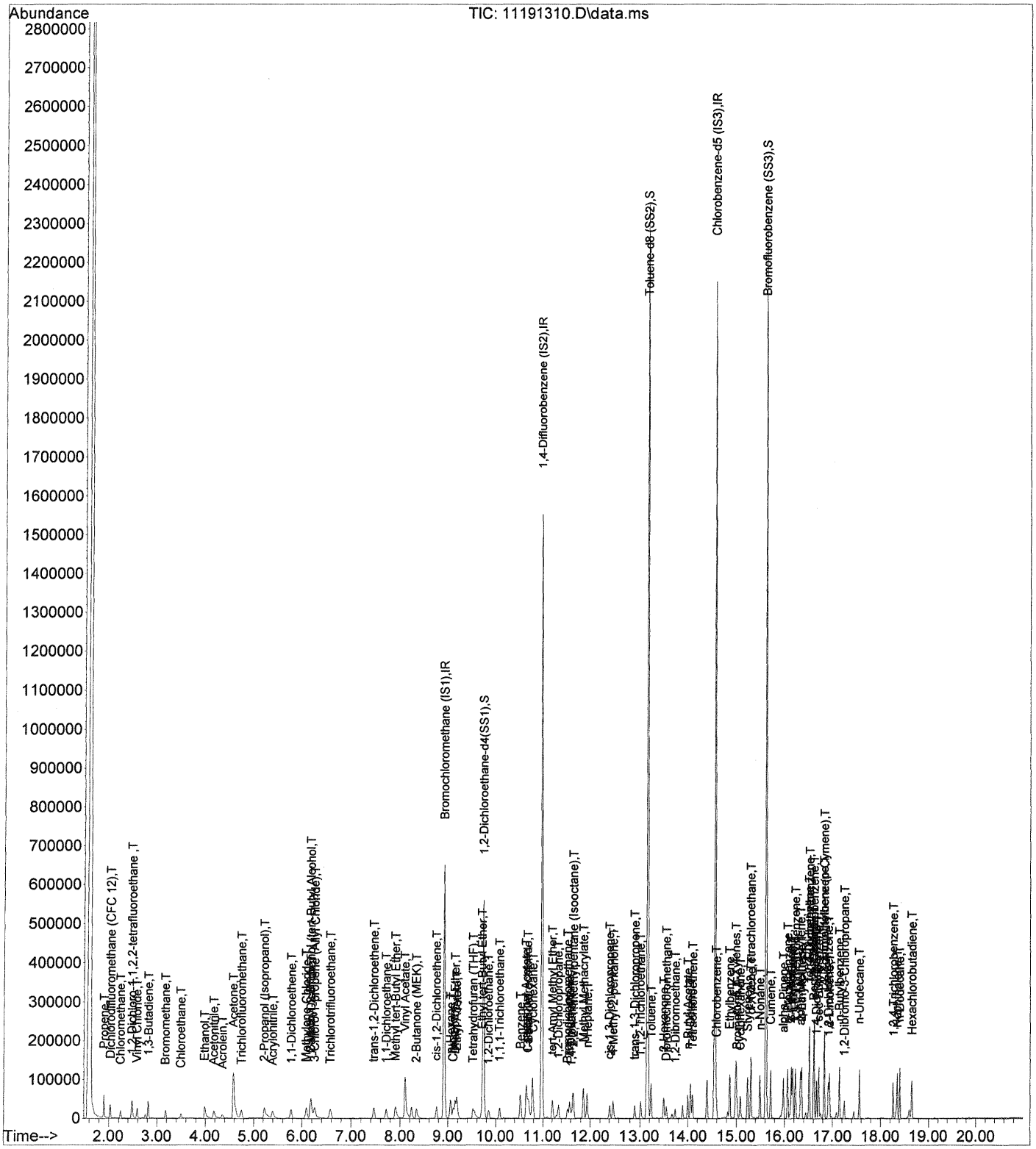
SP
CD 11/21/13

11/21/13

EM 11/22/13

Data File: I:\MS08\Data\2013_11\19\11191310.D
Acq On : 19 Nov 2013 15:35 Operator: EM/CD
Sample : 0.4ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 08:04:06 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191310.D
Acq On : 19 Nov 2013 15:35 Operator: EM/CD
Sample : 0.4ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 08:04:06 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	275769	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	1380210	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	547291	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.73	65	376963	11.531	ng		-0.01
Spiked Amount 12.500			Recovery = 92.24%				
57) Toluene-d8 (SS2)	13.15	98	1455138	12.550	ng		0.00
Spiked Amount 12.500			Recovery = 100.40%				
73) Bromofluorobenzene (SS3)	15.61	174	593553	12.795	ng		0.00
Spiked Amount 12.500			Recovery = 102.32%				
Target Compounds							Qvalue
2) Propene	1.90	42	15203	0.411	ng		99
3) Dichlorodifluoromethan...	2.03	85	24380	0.458	ng		99
4) Chloromethane	2.23	50	17739	0.558	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	14680	0.501	ng		98
6) Vinyl Chloride	2.58	62	19416	0.487	ng		99
7) 1,3-Butadiene	2.82	54	17761	0.619	ng		98
8) Bromomethane	3.18	94	13115	0.533	ng		100
9) Chloroethane	3.49	64	10628	0.477	ng		99
10) Ethanol	3.98	45	50464	2.698	ng		93
11) Acetonitrile	4.18	41	26021	0.399	ng		99
12) Acrolein	4.35	56	9907	0.590	ng		99
13) Acetone	4.58	58	75502	3.433	ng		93
14) Trichlorofluoromethane	4.75	101	22634	0.458	ng		97
15) 2-Propanol (Isopropanol)	5.22	45	78093	1.215	ng		94
16) Acrylonitrile	5.39	53	17614	0.454	ng		100
17) 1,1-Dichloroethene	5.77	96	13330	0.500	ng		98
18) 2-Methyl-2-Propanol (t...	6.17	59	74645	0.982	ng		86
19) Methylene Chloride	6.08	84	17235	0.589	ng		100
20) 3-Chloro-1-propene (Al...	6.25	41	27005	0.455	ng		87
21) Trichlorotrifluoroethane	6.58	151	12908	0.499	ng		97
22) Carbon Disulfide	6.18	76	59544	0.576	ng		100
23) trans-1,2-Dichloroethene	7.46	61	18799	0.457	ng		99
24) 1,1-Dichloroethane	7.71	63	24542	0.471	ng		98
25) Methyl tert-Butyl Ether	7.91	73	42652	0.469	ng		100
26) Vinyl Acetate	8.10	86	19423	2.254	ng	#	86
27) 2-Butanone (MEK)	8.34	72	11185	0.506	ng		96
28) cis-1,2-Dichloroethene	8.76	61	18061	0.468	ng		98
29) Diisopropyl Ether	9.14	87	11840m	0.425	ng		
30) Ethyl Acetate	9.18	61	9762	0.933	ng		98
31) n-Hexane	9.05	57	25311	0.470	ng		99
32) Chloroform	9.10	83	23086	0.481	ng		99
34) Tetrahydrofuran (THF)	9.52	72	9549	0.490	ng	#	87
35) Ethyl tert-Butyl Ether	9.71	87	18696	0.488	ng		97
36) 1,2-Dichloroethane	9.84	62	16850	0.454	ng		98
38) 1,1,1-Trichloroethane	10.08	97	20026	0.452	ng		99
39) Isopropyl Acetate	10.64	61	17896	0.993	ng	#	68
40) 1-Butanol	10.69	56	27337	0.892	ng		92
41) Benzene	10.52	78	58159	0.483	ng		99
42) Carbon Tetrachloride	10.68	117	17132	0.462	ng		95
43) Cyclohexane	10.78	84	46014	0.981	ng		97
44) tert-Amyl Methyl Ether	11.20	73	42343	0.478	ng		97
45) 1,2-Dichloropropane	11.34	63	14234	0.495	ng		98

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191310.D
Acq On : 19 Nov 2013 15:35 Operator: EM/CD
Sample : 0.4ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 08:04:06 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

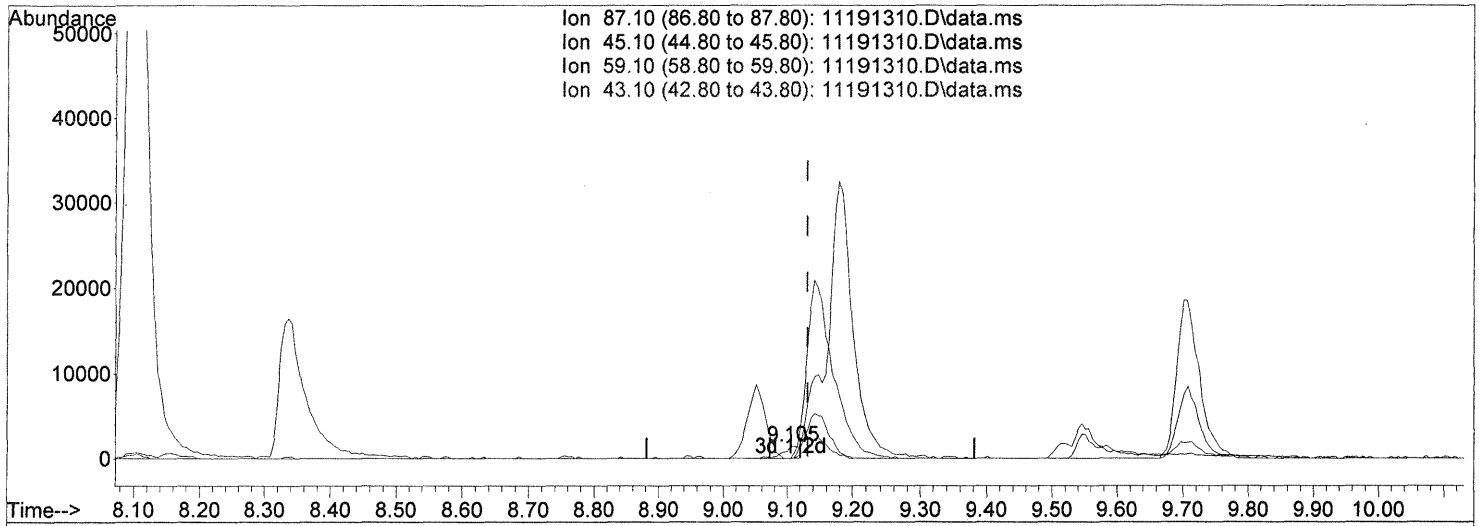
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
46) Bromodichloromethane	11.53	83	17023	0.462 ng		100
47) Trichloroethene	11.58	130	16372	0.498 ng		99
48) 1,4-Dioxane	11.61	88	12149	0.558 ng	#	70
49) 2,2,4-Trimethylpentane...	11.65	57	67136	0.494 ng		99
50) Methyl Methacrylate	11.86	100	12950	0.936 ng		97
51) n-Heptane	11.93	71	15549	0.486 ng		96
52) cis-1,3-Dichloropropene	12.40	75	20585	0.455 ng		100
53) 4-Methyl-2-pentanone	12.48	58	13875	0.483 ng		95
54) trans-1,3-Dichloropropene	12.89	75	17826	0.427 ng		99
55) 1,1,2-Trichloroethane	13.00	97	13523	0.503 ng		98
58) Toluene	13.23	91	59658	0.495 ng		98
59) 2-Hexanone	13.49	43	35373	0.498 ng		95
60) Dibromochloromethane	13.55	129	15106	0.483 ng		98
61) 1,2-Dibromoethane	13.73	107	14762	0.479 ng		93
62) n-Butyl Acetate	13.99	43	37678	0.494 ng		100
63) n-Octane	14.05	57	13307	0.474 ng		96
64) Tetrachloroethene	14.10	166	17821	0.455 ng		99
65) Chlorobenzene	14.59	112	39870	0.509 ng		100
66) Ethylbenzene	14.86	91	65797	0.490 ng		98
67) m- & p-Xylenes	14.99	91	103026	0.962 ng		99
68) Bromoform	15.01	173	13388	0.461 ng		98
69) Styrene	15.23	104	42169	0.518 ng		99
70) o-Xylene	15.31	91	53159	0.478 ng		96
71) n-Nonane	15.49	43	31246	0.444 ng		98
72) 1,1,2,2-Tetrachloroethane	15.30	83	23488	0.470 ng		98
74) Cumene	15.72	105	68607	0.474 ng		98
75) alpha-Pinene	15.98	93	35492	0.520 ng		95
76) n-Propylbenzene	16.07	91	78392	0.463 ng		99
77) 3-Ethyltoluene	16.14	105	69104	0.468 ng		100
78) 4-Ethyltoluene	16.17	105	63333	0.512 ng		96
79) 1,3,5-Trimethylbenzene	16.23	105	55493	0.487 ng		99
80) alpha-Methylstyrene	16.33	118	29796	0.541 ng		97
81) 2-Ethyltoluene	16.36	105	65641	0.489 ng		98
82) 1,2,4-Trimethylbenzene	16.52	105	56027	0.486 ng		99
83) n-Decane	16.61	57	32013	0.480 ng		94
84) Benzyl Chloride	16.60	91	44710	0.464 ng		95
85) 1,3-Dichlorobenzene	16.61	146	34118	0.494 ng		100
86) 1,4-Dichlorobenzene	16.66	146	35162	0.502 ng		98
87) sec-Butylbenzene	16.71	105	75808	0.506 ng		98
88) 4-Isopropyltoluene (p-...	16.83	119	70691	0.472 ng		97
89) 1,2,3-Trimethylbenzene	16.82	105	57783	0.489 ng		100
90) 1,2-Dichlorobenzene	16.92	146	32195	0.497 ng		100
91) d-Limonene	16.94	68	21209	0.530 ng		99
92) 1,2-Dibromo-3-Chloropr...	17.25	157	11877	0.480 ng		96
93) n-Undecane	17.56	57	31835	0.454 ng		99
94) 1,2,4-Trichlorobenzene	18.27	180	26115	0.523 ng		99
95) Naphthalene	18.35	128	76468	0.520 ng		99
96) n-Dodecane	18.41	57	32755	0.525 ng		100
97) Hexachlorobutadiene	18.66	225	17441	0.514 ng		99
98) Cyclohexanone	15.08	55	21669	0.555 ng		96
99) tert-Butylbenzene	16.51	119	57313	0.494 ng		100
100) n-Butylbenzene	17.15	91	58339	0.517 ng		98

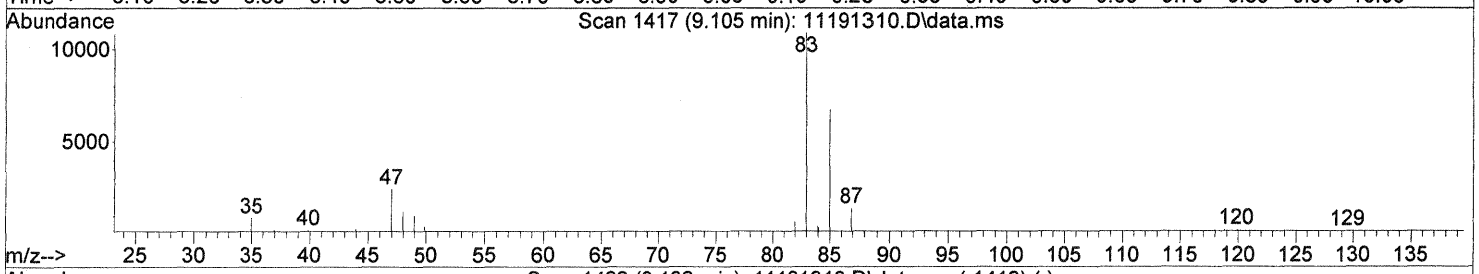
(#) = qualifier out of range (m) = manual integration (+) = signals summed

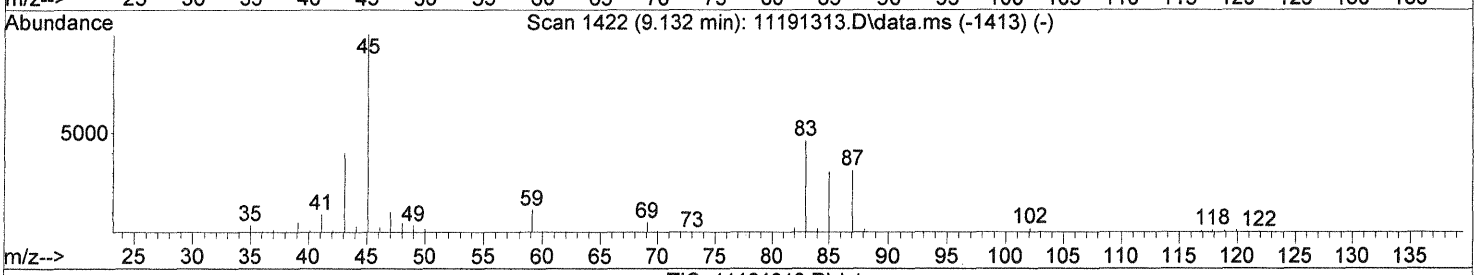
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2013_11\19\11191310.D
Acq On : 19 Nov 2013 15:35 Operator: EM/CD
Sample : 0.4ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:22 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191310.D\data.ms

(29) Diisopropyl Ether (T)

9.105min (-0.027) 0.09ng

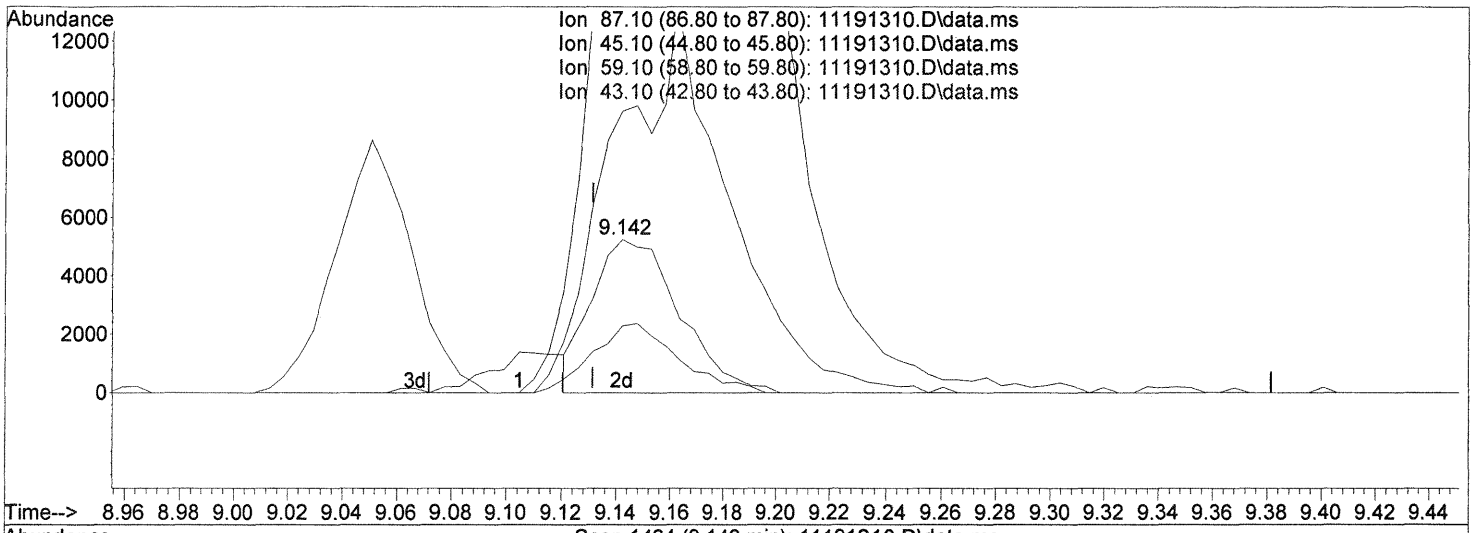
response 2531

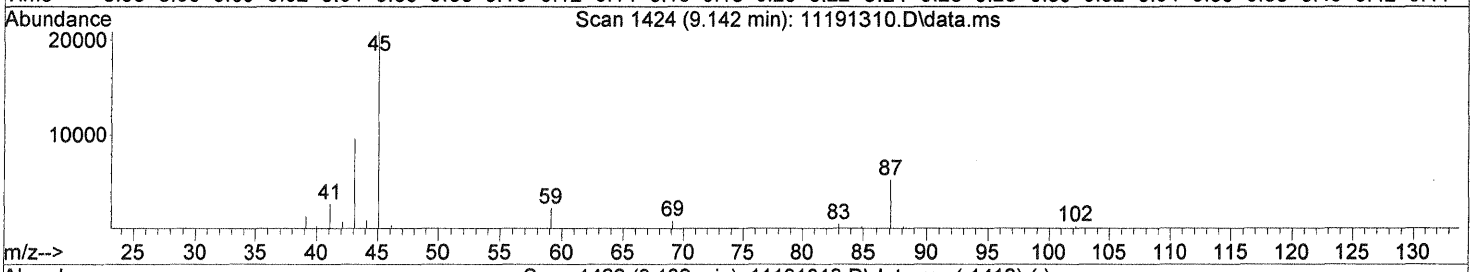
Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

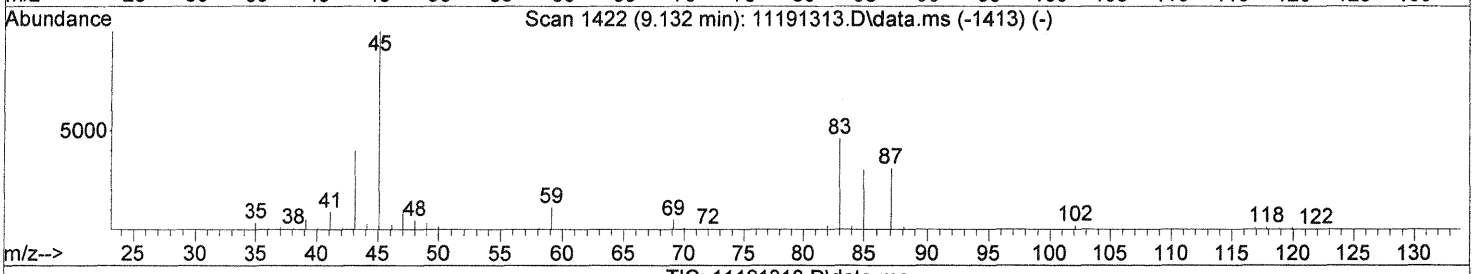
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2013_11\19\11191310.D
Acq On : 19 Nov 2013 15:35 Operator: EM/CD
Sample : 0.4ng TO-15 ICAL Std
Misc : S25-11181301/S25-11191301 (12/18)
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 20 07:16:22 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191310.D\data.ms

(29) Diisopropyl Ether (T)

9.142min (+0.011) 0.43ng m

response 11840

Ion	Exp%	Act%
87.10	100	100
45.10	384.20	0.00#
59.10	35.00	0.00#
43.10	0.00	0.00

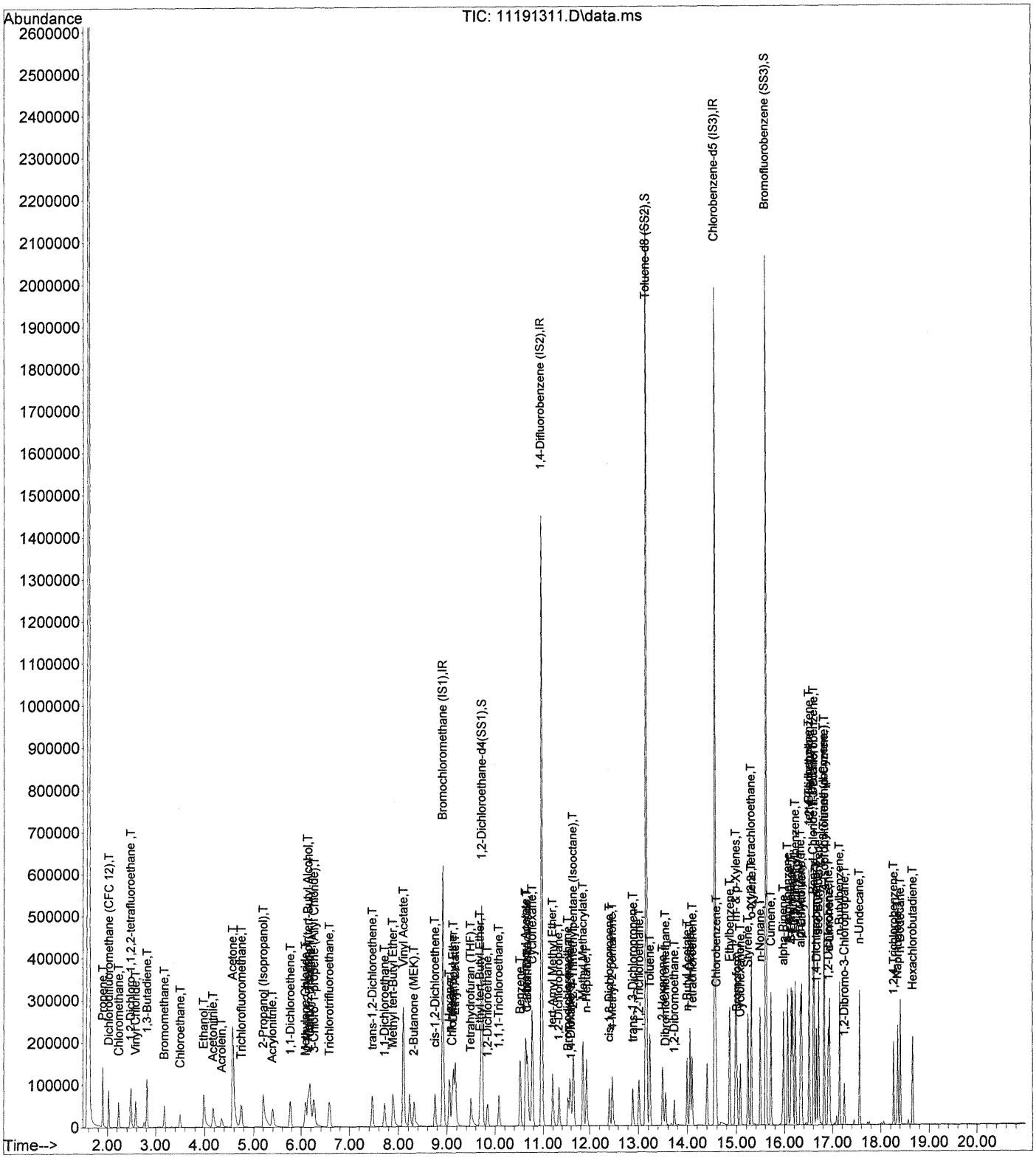
MP
CD 11/20/13

11/21/13

EM 11/22/13

Data File: I:\MS08\Data\2013_11\19\11191311.D
Acq On : 19 Nov 2013 16:04 Operator: EM/CD
Sample : 1.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 20 07:16:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191311.D
Acq On : 19 Nov 2013 16:04 Operator: EM/CD
Sample : 1.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 20 07:16:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	258588	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	1269907	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	508485	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.73	65	351350	11.461	ng		-0.01
Spiked Amount 12.500			Recovery = 91.68%				
57) Toluene-d8 (SS2)	13.15	98	1345897	12.494	ng		0.00
Spiked Amount 12.500			Recovery = 99.92%				
73) Bromofluorobenzene (SS3)	15.61	174	548133	12.717	ng		0.00
Spiked Amount 12.500			Recovery = 101.76%				
Target Compounds							Qvalue
2) Propene	1.90	42	39046	1.126	ng		99
3) Dichlorodifluoromethan...	2.03	85	65390	1.309	ng		100
4) Chloromethane	2.23	50	52828	1.772	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	38965	1.418	ng		99
6) Vinyl Chloride	2.58	62	51853	1.388	ng		100
7) 1,3-Butadiene	2.82	54	49166	1.829	ng		100
8) Bromomethane	3.18	94	33489	1.451	ng		97
9) Chloroethane	3.50	64	29228	1.400	ng		99
10) Ethanol	3.98	45	121705	6.939	ng		97
11) Acetonitrile	4.18	41	66438	1.088	ng		98
12) Acrolein	4.35	56	23920	1.520	ng		99
13) Acetone	4.57	58	142054	6.889	ng		95
14) Trichlorofluoromethane	4.75	101	56812	1.227	ng		99
15) 2-Propanol (Isopropanol)	5.20	45	192590	3.197	ng		97
16) Acrylonitrile	5.39	53	46036	1.266	ng		97
17) 1,1-Dichloroethene	5.77	96	35085	1.403	ng		98
18) 2-Methyl-2-Propanol (t...	6.14	59	192858	2.707	ng		94
19) Methylene Chloride	6.09	84	39203	1.428	ng		98
20) 3-Chloro-1-propene (Al...	6.26	41	62758	1.127	ng		95
21) Trichlorotrifluoroethane	6.58	151	33064	1.362	ng		98
22) Carbon Disulfide	6.18	76	128954	1.331	ng		99
23) trans-1,2-Dichloroethene	7.47	61	49867	1.293	ng		100
24) 1,1-Dichloroethane	7.72	63	62898	1.289	ng		98
25) Methyl tert-Butyl Ether	7.89	73	111172	1.305	ng		99
26) Vinyl Acetate	8.10	86	47980	5.938	ng	#	84
27) 2-Butanone (MEK)	8.32	72	24651	1.189	ng		94
28) cis-1,2-Dichloroethene	8.76	61	48353	1.337	ng		100
29) Diisopropyl Ether	9.13	87	37572	1.439	ng	#	99
30) Ethyl Acetate	9.17	61	25689	2.620	ng		99
31) n-Hexane	9.06	57	59606	1.180	ng		99
32) Chloroform	9.11	83	59003	1.311	ng		100
34) Tetrahydrofuran (THF)	9.50	72	25130	1.375	ng		99
35) Ethyl tert-Butyl Ether	9.70	87	47772	1.329	ng		99
36) 1,2-Dichloroethane	9.85	62	44093	1.266	ng		98
38) 1,1,1-Trichloroethane	10.08	97	51008	1.251	ng		98
39) Isopropyl Acetate	10.64	61	46637	2.811	ng	#	76
40) 1-Butanol	10.68	56	65563	2.326	ng		94
41) Benzene	10.53	78	146961	1.325	ng		100
42) Carbon Tetrachloride	10.67	117	44967	1.319	ng		99
43) Cyclohexane	10.78	84	116765	2.707	ng		98
44) tert-Amyl Methyl Ether	11.20	73	109355	1.343	ng		100
45) 1,2-Dichloropropane	11.34	63	36178	1.367	ng		99

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191311.D
Acq On : 19 Nov 2013 16:04 Operator: EM/CD
Sample : 1.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

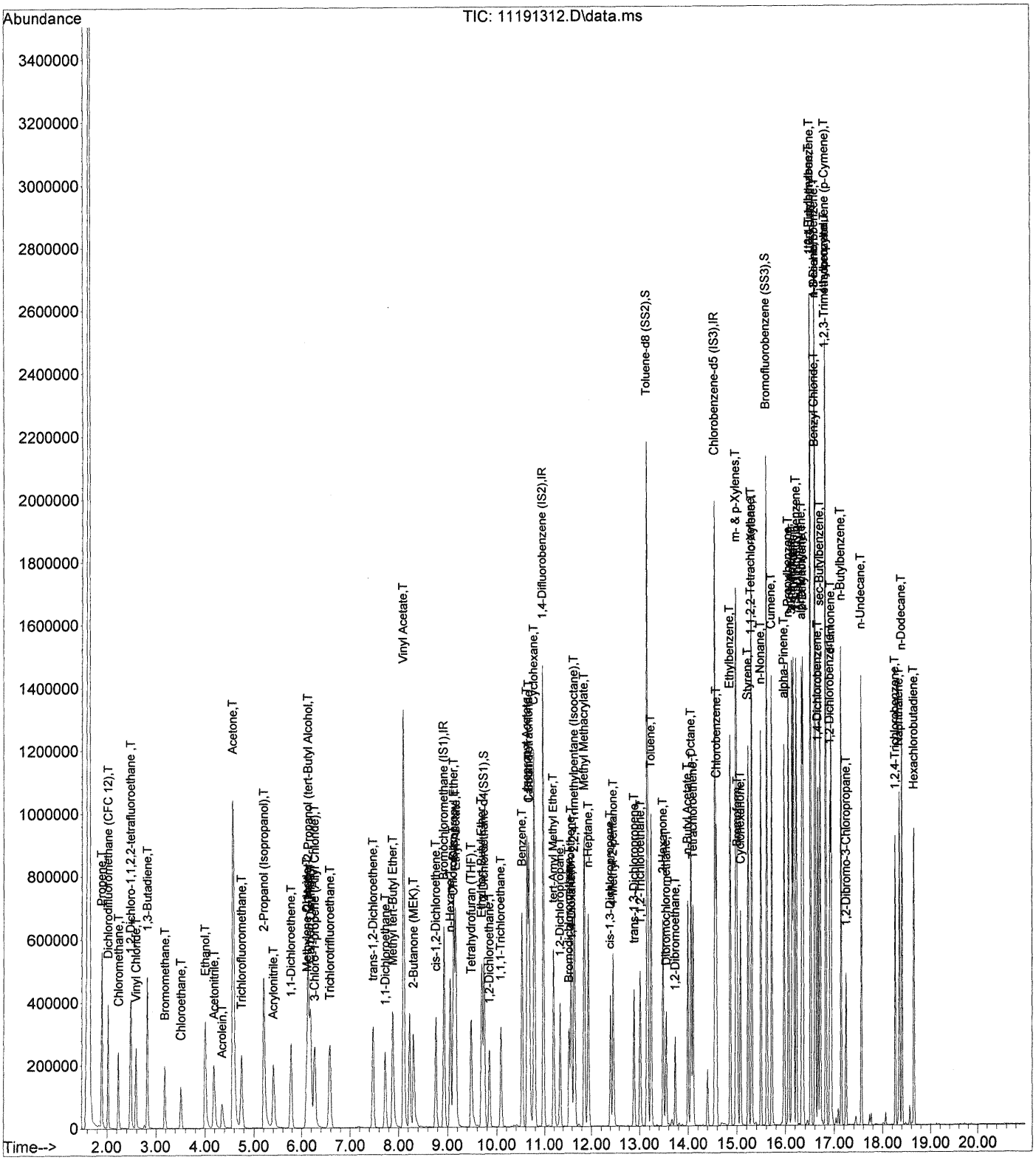
Quant Time: Nov 20 07:16:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.53	83	46289	1.366	ng	98
47) Trichloroethene	11.57	130	40904	1.352	ng	100
48) 1,4-Dioxane	11.60	88	29652	1.480	ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	170425	1.363	ng	99
50) Methyl Methacrylate	11.86	100	33124	2.603	ng	97
51) n-Heptane	11.93	71	39288	1.336	ng	99
52) cis-1,3-Dichloropropene	12.41	75	53538	1.287	ng	100
53) 4-Methyl-2-pentanone	12.47	58	34869	1.318	ng	96
54) trans-1,3-Dichloropropene	12.89	75	48633	1.266	ng	98
55) 1,1,2-Trichloroethane	13.01	97	34673	1.403	ng	99
58) Toluene	13.23	91	149920	1.338	ng	100
59) 2-Hexanone	13.49	43	85746	1.300	ng	99
60) Dibromochloromethane	13.55	129	39456	1.358	ng	99
61) 1,2-Dibromoethane	13.73	107	38560	1.346	ng	99
62) n-Butyl Acetate	13.99	43	97510	1.375	ng	99
63) n-Octane	14.05	57	33368	1.279	ng	99
64) Tetrachloroethene	14.10	166	45224	1.242	ng	100
65) Chlorobenzene	14.59	112	100778	1.385	ng	100
66) Ethylbenzene	14.87	91	170818	1.371	ng	99
67) m- & p-Xylenes	14.99	91	265429	2.667	ng	99
68) Bromoform	15.01	173	34481	1.277	ng	100
69) Styrene	15.23	104	109460	1.449	ng	99
70) o-Xylene	15.31	91	133862	1.296	ng	99
71) n-Nonane	15.49	43	79147	1.210	ng	99
72) 1,1,2,2-Tetrachloroethane	15.30	83	57224	1.233	ng	100
74) Cumene	15.72	105	176849	1.315	ng	97
75) alpha-Pinene	15.98	93	91348	1.440	ng	99
76) n-Propylbenzene	16.07	91	204243	1.300	ng	99
77) 3-Ethyltoluene	16.14	105	176773	1.288	ng	99
78) 4-Ethyltoluene	16.17	105	162583	1.413	ng	98
79) 1,3,5-Trimethylbenzene	16.23	105	143325	1.354	ng	100
80) alpha-Methylstyrene	16.33	118	77548	1.515	ng	98
81) 2-Ethyltoluene	16.36	105	166760	1.337	ng	98
82) 1,2,4-Trimethylbenzene	16.52	105	142966	1.335	ng	99
83) n-Decane	16.61	57	80111	1.292	ng	97
84) Benzyl Chloride	16.60	91	108728	1.215	ng	99
85) 1,3-Dichlorobenzene	16.61	146	85967	1.339	ng	100
86) 1,4-Dichlorobenzene	16.67	146	83470	1.283	ng	99
87) sec-Butylbenzene	16.71	105	191785	1.379	ng	99
88) 4-Isopropyltoluene (p-...	16.84	119	179911	1.292	ng	99
89) 1,2,3-Trimethylbenzene	16.82	105	145530	1.326	ng	100
90) 1,2-Dichlorobenzene	16.92	146	79076	1.313	ng	100
91) d-Limonene	16.94	68	56322	1.515	ng	97
92) 1,2-Dibromo-3-Chloropr...	17.25	157	26839	1.168	ng	98
93) n-Undecane	17.56	57	79967	1.228	ng	99
94) 1,2,4-Trichlorobenzene	18.27	180	54353	1.171	ng	98
95) Naphthalene	18.35	128	151341	1.107	ng	98
96) n-Dodecane	18.41	57	73938	1.274	ng	98
97) Hexachlorobutadiene	18.66	225	37691	1.196	ng	99
98) Cyclohexanone	15.08	55	50958	1.405	ng	98
99) tert-Butylbenzene	16.51	119	145662	1.351	ng	99
100) n-Butylbenzene	17.15	91	146270	1.396	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191312.D
Acq On : 19 Nov 2013 16:34 Operator: EM/CD
Sample : 5.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 20 07:16:35 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191312.D
Acq On : 19 Nov 2013 16:34 Operator: EM/CD
Sample : 5.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 20 07:16:35 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	265682	12.500	ng		-0.01
37) 1,4-Difluorobenzene (IS2)	10.98	114	1295650	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	515280	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	358740	11.390	ng		0.00
Spiked Amount 12.500			Recovery = 91.12%				
57) Toluene-d8 (SS2)	13.15	98	1348893	12.356	ng		0.00
Spiked Amount 12.500			Recovery = 98.88%				
73) Bromofluorobenzene (SS3)	15.61	174	546281	12.507	ng		0.00
Spiked Amount 12.500			Recovery = 100.08%				
Target Compounds							Qvalue
2) Propene	1.89	42	167358	4.698	ng		100
3) Dichlorodifluoromethan...	2.02	85	292423	5.698	ng		99
4) Chloromethane	2.23	50	229238	7.486	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	176781	6.263	ng		99
6) Vinyl Chloride	2.58	62	233528	6.085	ng		100
7) 1,3-Butadiene	2.82	54	218017	7.893	ng		99
8) Bromomethane	3.19	94	139648	5.891	ng		100
9) Chloroethane	3.51	64	129634	6.043	ng		100
10) Ethanol	4.00	45	537186	29.810	ng		98
11) Acetonitrile	4.19	41	293719	4.679	ng		99
12) Acrolein	4.35	56	106151	6.564	ng		100
13) Acetone	4.58	58	652809	30.813	ng		96
14) Trichlorofluoromethane	4.75	101	263561	5.539	ng		99
15) 2-Propanol (Isopropanol)	5.20	45	912549	14.743	ng		98
16) Acrylonitrile	5.40	53	222661	5.959	ng		99
17) 1,1-Dichloroethene	5.77	96	161071	6.270	ng		99
18) 2-Methyl-2-Propanol (t...	6.14	59	882083	12.049	ng		98
19) Methylene Chloride	6.11	84	166823	5.915	ng		99
20) 3-Chloro-1-propene (Al...	6.27	41	271773	4.752	ng		100
21) Trichlorotrifluoroethane	6.58	151	151629	6.080	ng		99
22) Carbon Disulfide	6.18	76	557236	5.599	ng		100
23) trans-1,2-Dichloroethene	7.47	61	230471	5.815	ng		100
24) 1,1-Dichloroethane	7.73	63	285807	5.699	ng		100
25) Methyl tert-Butyl Ether	7.88	73	495878	5.665	ng		100
26) Vinyl Acetate	8.10	86	231202	27.852	ng	#	87
27) 2-Butanone (MEK)	8.31	72	114708	5.385	ng		98
28) cis-1,2-Dichloroethene	8.77	61	223863	6.026	ng		98
29) Diisopropyl Ether	9.13	87	165140	6.157	ng	#	98
30) Ethyl Acetate	9.17	61	114898	11.403	ng		99
31) n-Hexane	9.06	57	253237	4.881	ng		99
32) Chloroform	9.12	83	266594	5.766	ng		100
34) Tetrahydrofuran (THF)	9.48	72	112332	5.981	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	214249	5.800	ng		99
36) 1,2-Dichloroethane	9.85	62	199085	5.565	ng		100
38) 1,1,1-Trichloroethane	10.08	97	233042	5.600	ng		100
39) Isopropyl Acetate	10.64	61	205613	12.148	ng	#	73
40) 1-Butanol	10.68	56	324837	11.294	ng		97
41) Benzene	10.53	78	640805	5.663	ng		100
42) Carbon Tetrachloride	10.68	117	204365	5.876	ng		100
43) Cyclohexane	10.78	84	520890	11.834	ng		99
44) tert-Amyl Methyl Ether	11.19	73	491063	5.910	ng		100
45) 1,2-Dichloropropane	11.34	63	161763	5.989	ng		100

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191312.D
Acq On : 19 Nov 2013 16:34 Operator: EM/CD
Sample : 5.0ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181302 (12/17)
ALS Vial : 10 Sample Multiplier: 1

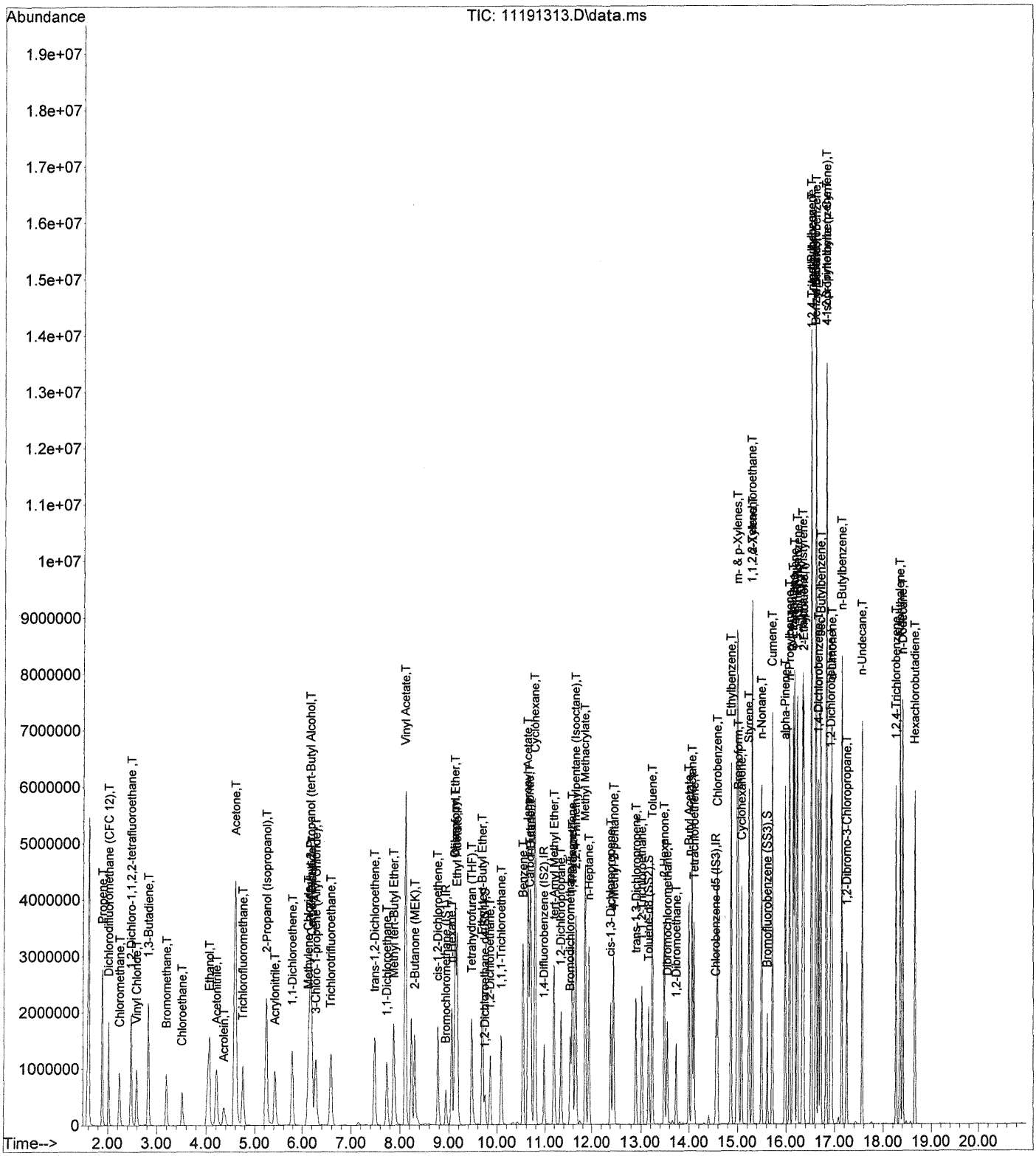
Quant Time: Nov 20 07:16:35 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.54	83	208863	6.039	ng	100
47) Trichloroethene	11.57	130	184315	5.971	ng	100
48) 1,4-Dioxane	11.59	88	134283	6.568	ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	736992	5.776	ng	100
50) Methyl Methacrylate	11.85	100	153689	11.838	ng	100
51) n-Heptane	11.93	71	169988	5.665	ng	99
52) cis-1,3-Dichloropropene	12.40	75	248704	5.860	ng	99
53) 4-Methyl-2-pentanone	12.47	58	158365	5.868	ng	97
54) trans-1,3-Dichloropropene	12.89	75	227355	5.803	ng	99
55) 1,1,2-Trichloroethane	13.01	97	156811	6.218	ng	100
58) Toluene	13.23	91	673192	5.928	ng	99
59) 2-Hexanone	13.48	43	393539	5.886	ng	99
60) Dibromochloromethane	13.55	129	184621	6.270	ng	98
61) 1,2-Dibromoethane	13.73	107	177038	6.100	ng	99
62) n-Butyl Acetate	13.99	43	443419	6.170	ng	100
63) n-Octane	14.05	57	147355	5.575	ng	99
64) Tetrachloroethene	14.10	166	201574	5.462	ng	100
65) Chlorobenzene	14.59	112	451603	6.123	ng	99
66) Ethylbenzene	14.86	91	766180	6.066	ng	98
67) m- & p-Xylenes	14.99	91	1197631	11.876	ng	99
68) Bromoform	15.01	173	162786	5.950	ng	100
69) Styrene	15.23	104	497588	6.498	ng	100
70) o-Xylene	15.31	91	606325	5.791	ng	99
71) n-Nonane	15.49	43	357481	5.394	ng	99
72) 1,1,2,2-Tetrachloroethane	15.30	83	268481	5.707	ng	99
74) Cumene	15.72	105	786722	5.774	ng	99
75) alpha-Pinene	15.98	93	411852	6.405	ng	100
76) n-Propylbenzene	16.07	91	918753	5.769	ng	98
77) 3-Ethyltoluene	16.14	105	791821	5.693	ng	99
78) 4-Ethyltoluene	16.17	105	735958	6.314	ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	644825	6.012	ng	99
80) alpha-Methylstyrene	16.33	118	360466	6.948	ng	100
81) 2-Ethyltoluene	16.36	105	747064	5.913	ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	646828	5.959	ng	99
83) n-Decane	16.61	57	364128	5.794	ng	97
84) Benzyl Chloride	16.60	91	537108	5.924	ng	98
85) 1,3-Dichlorobenzene	16.61	146	388196	5.968	ng	99
86) 1,4-Dichlorobenzene	16.67	146	382443	5.801	ng	100
87) sec-Butylbenzene	16.71	105	865353	6.138	ng	98
88) 4-Isopropyltoluene (p-...	16.83	119	814274	5.770	ng	99
89) 1,2,3-Trimethylbenzene	16.82	105	658898	5.926	ng	99
90) 1,2-Dichlorobenzene	16.92	146	359481	5.892	ng	100
91) d-Limonene	16.94	68	255950	6.792	ng	99
92) 1,2-Dibromo-3-Chloropr...	17.25	157	126298	5.426	ng	98
93) n-Undecane	17.56	57	363459	5.508	ng	98
94) 1,2,4-Trichlorobenzene	18.27	180	251315	5.343	ng	99
95) Naphthalene	18.35	128	703240	5.078	ng	99
96) n-Dodecane	18.41	57	340783	5.796	ng	99
97) Hexachlorobutadiene	18.66	225	169508	5.306	ng	100
98) Cyclohexanone	15.08	55	229846	6.255	ng	98
99) tert-Butylbenzene	16.51	119	657706	6.018	ng	100
100) n-Butylbenzene	17.15	91	661349	6.227	ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191313.D
Acq On : 19 Nov 2013 17:03 Operator: EM/CD
Sample : 25ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:13:03 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:12:33 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191313.D
Acq On : 19 Nov 2013 17:03 Operator: EM/CD
Sample : 25ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:13:03 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:12:33 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.94	130	264156	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	1244370	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.55	82	478888	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	352024	11.241	ng		0.00
Spiked Amount 12.500			Recovery	=	89.92%		
57) Toluene-d8 (SS2)	13.16	98	1298702	12.801	ng		0.00
Spiked Amount 12.500			Recovery	=	102.40%		
73) Bromofluorobenzene (SS3)	15.61	174	499410	12.303	ng		0.00
Spiked Amount 12.500			Recovery	=	98.40%		
Target Compounds							Qvalue
2) Propene	1.89	42	853558	24.098	ng		97
3) Dichlorodifluoromethan...	2.01	85	1450056	28.416	ng		99
4) Chloromethane	2.24	50	1177066	38.659	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	870507	31.016	ng		98
6) Vinyl Chloride	2.59	62	1172963	30.739	ng		100
7) 1,3-Butadiene	2.83	54	1134581	41.312	ng		96
8) Bromomethane	3.20	94	721158	30.598	ng		99
9) Chloroethane	3.52	64	656448	30.776	ng		99
10) Ethanol	4.07	45	3210249	179.176	ng		100
11) Acetonitrile	4.21	41	1627116	26.072	ng		99
12) Acrolein	4.37	56	533651	33.189	ng		98
13) Acetone	4.60	58	3213217	152.543	ng		90
14) Trichlorofluoromethane	4.76	101	1290275	27.273	ng		100
15) 2-Propanol (Isopropanol)	5.25	45	4673983	75.948	ng		100
16) Acrylonitrile	5.42	53	1134630	30.541	ng		99
17) 1,1-Dichloroethene	5.79	96	819731	32.093	ng		92
18) 2-Methyl-2-Propanol (t...	6.17	59	4594342	63.121	ng		99
19) Methylene Chloride	6.13	84	827873	29.525	ng		94
20) 3-Chloro-1-propene (Al...	6.28	41	1391412	24.471	ng	#	100
21) Trichlorotrifluoroethane	6.58	151	760173	30.657	ng		99
22) Carbon Disulfide	6.19	76	2932454	29.636	ng		99
23) trans-1,2-Dichloroethene	7.49	61	1177698	29.885	ng		99
24) 1,1-Dichloroethane	7.73	63	1412969	28.336	ng		100
25) Methyl tert-Butyl Ether	7.87	73	2453684	28.195	ng		100
26) Vinyl Acetate	8.12	86	1186306	143.733	ng	#	83
27) 2-Butanone (MEK)	8.31	72	589509	27.834	ng		94
28) cis-1,2-Dichloroethene	8.77	61	1125115	30.460	ng		94
29) Diisopropyl Ether	9.13	87	813898	30.522	ng	#	58
30) Ethyl Acetate	9.17	61	588656	58.760	ng		100
31) n-Hexane	9.06	57	1116369	21.642	ng		100
32) Chloroform	9.13	83	1347455	29.310	ng		99
34) Tetrahydrofuran (THF)	9.47	72	579979	31.059	ng		95
35) Ethyl tert-Butyl Ether	9.69	87	1070879	29.157	ng		97
36) 1,2-Dichloroethane	9.85	62	998576	28.073	ng		100
38) 1,1,1-Trichloroethane	10.09	97	1153297	28.855	ng		99
39) Isopropyl Acetate	10.64	61	1046554	64.378	ng		98
40) 1-Butanol	10.70	56	2162523	78.288	ng		79
41) Benzene	10.54	78	3095723	28.488	ng		99
42) Carbon Tetrachloride	10.68	117	1043188	31.231	ng		100
43) Cyclohexane	10.79	84	2575897	60.932	ng		99
44) tert-Amyl Methyl Ether	11.20	73	2488328	31.182	ng		98
45) 1,2-Dichloropropane	11.34	63	811406	31.278	ng		99

Data File: I:\MS08\Data\2013_11\19\11191313.D
Acq On : 19 Nov 2013 17:03 Operator: EM/CD
Sample : 25ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:13:03 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:12:33 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

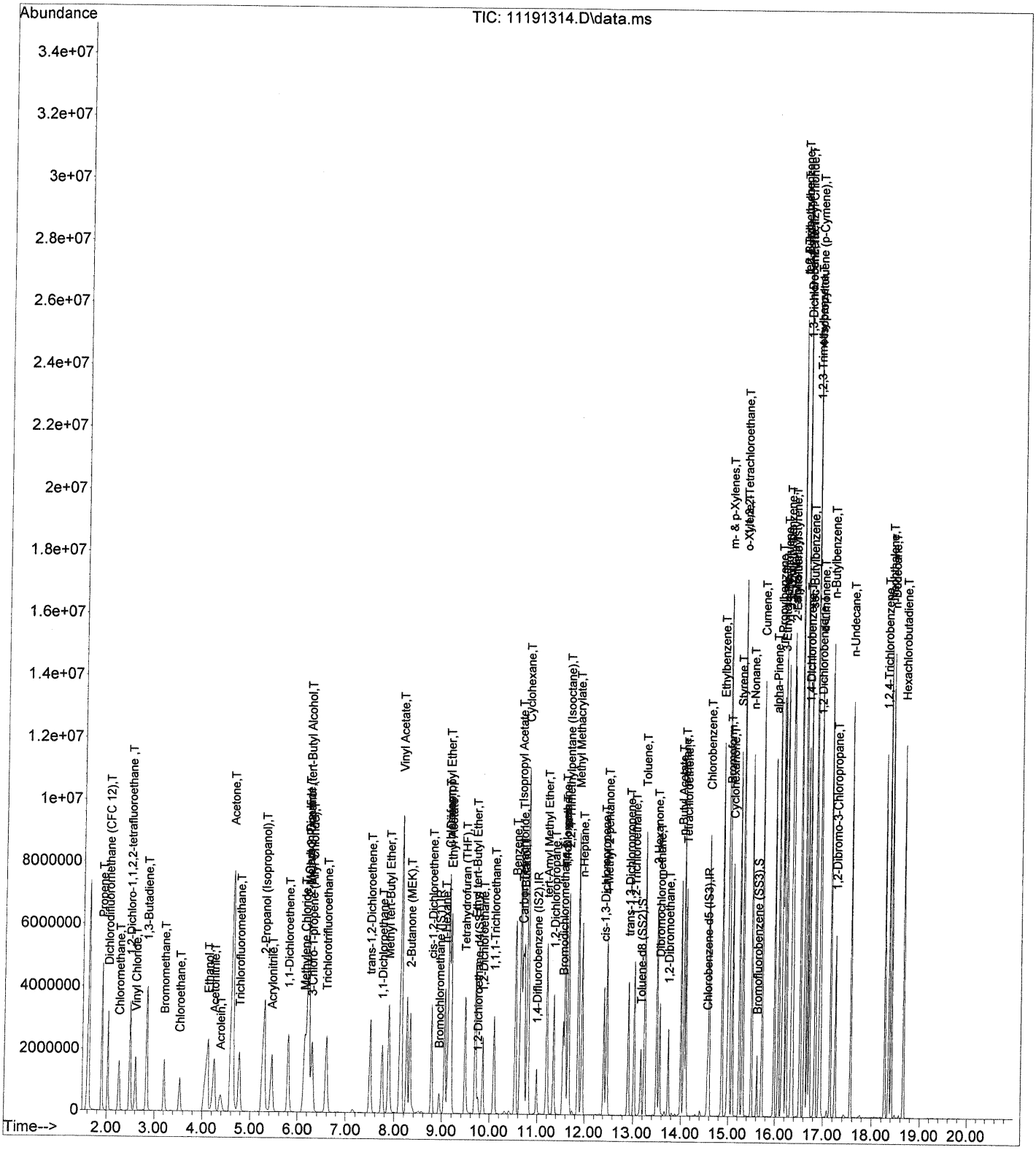
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.54	83	1073336	32.314 ng	100
47) Trichloroethene	11.58	130	934694	31.527 ng	100
48) 1,4-Dioxane	11.58	88	750357	38.216 ng	98
49) 2,2,4-Trimethylpentane...	11.65	57	3691865	30.129 ng	98
50) Methyl Methacrylate	11.86	100	788322	63.225 ng	99
51) n-Heptane	11.94	71	805228	27.941 ng	97
52) cis-1,3-Dichloropropene	12.41	75	1285302	31.533 ng	100
53) 4-Methyl-2-pentanone	12.47	58	853836	32.942 ng	94
54) trans-1,3-Dichloropropene	12.89	75	1193416	31.715 ng	100
55) 1,1,2-Trichloroethane	13.01	97	804130	33.199 ng	100
58) Toluene	13.24	91	3330949	31.561 ng	99
59) 2-Hexanone	13.48	43	2131713	34.306 ng	98
60) Dibromochloromethane	13.55	129	953798	34.853 ng	100
61) 1,2-Dibromoethane	13.74	107	915570	33.947 ng	98
62) n-Butyl Acetate	13.99	43	2440551	36.540 ng	98
63) n-Octane	14.06	57	727653	29.623 ng	97
64) Tetrachloroethene	14.10	166	1027818	29.965 ng	99
65) Chlorobenzene	14.59	112	2323104	33.889 ng	99
66) Ethylbenzene	14.87	91	3850388	32.802 ng	98
67) m- & p-Xylenes	15.00	91	6073251	64.798 ng	99
68) Bromoform	15.01	173	911308	35.840 ng	99
69) Styrene	15.24	104	2624880	36.882 ng	99
70) o-Xylene	15.31	91	3110313	31.966 ng	100
71) n-Nonane	15.50	43	1770718	28.747 ng	96
72) 1,1,2,2-Tetrachloroethane	15.30	83	1449243	33.148 ng	99
74) Cumene	15.72	105	4008098	31.653 ng	99
75) alpha-Pinene	15.98	93	2100064	35.143 ng	98
76) n-Propylbenzene	16.07	91	4663701	31.511 ng	99
77) 3-Ethyltoluene	16.15	105	4345192	33.612 ng	99
78) 4-Ethyltoluene	16.17	105	3535645	32.637 ng	97
79) 1,3,5-Trimethylbenzene	16.23	105	3370669	33.814 ng	98
80) alpha-Methylstyrene	16.34	118	2004532	41.572 ng	90
81) 2-Ethyltoluene	16.36	105	3927023	33.442 ng	98
82) 1,2,4-Trimethylbenzene	16.52	105	3451577	34.212 ng	97
83) n-Decane	16.61	57	1788944	30.626 ng	96
84) Benzyl Chloride	16.61	91	3132084	37.173 ng	96
85) 1,3-Dichlorobenzene	16.62	146	2198635	36.370 ng	100
86) 1,4-Dichlorobenzene	16.67	146	2116218	34.539 ng	99
87) sec-Butylbenzene	16.72	105	4478985	34.186 ng	99
88) 4-Isopropyltoluene (p-...	16.84	119	4319975	32.940 ng	98
89) 1,2,3-Trimethylbenzene	16.83	105	3570030	34.549 ng	94
90) 1,2-Dichlorobenzene	16.92	146	2032746	35.851 ng	100
91) d-Limonene	16.94	68	1389221	39.666 ng	98
92) 1,2-Dibromo-3-Chloropr...	17.25	157	812292	37.548 ng	94
93) n-Undecane	17.56	57	1902963	31.027 ng	99
94) 1,2,4-Trichlorobenzene	18.27	180	1697824	38.839 ng	99
95) Naphthalene	18.35	128	5100471	39.625 ng	100
96) n-Dodecane	18.41	57	1972732	36.103 ng	99
97) Hexachlorobutadiene	18.66	225	1028859	34.656 ng	98
98) Cyclohexanone	15.08	55	1423838	41.693 ng	96
99) tert-Butylbenzene	16.52	119	3461063	34.078 ng	100
100) n-Butylbenzene	17.15	91	3532494	35.789 ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191314.D
Acq On : 19 Nov 2013 17:32 Operator: EM/CD
Sample : 50ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:16:40 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191314.D
Acq On : 19 Nov 2013 17:32 Operator: EM/CD
Sample : 50ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:16:40 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EMM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.94	130	270528	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	10.99	114	1272117	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.56	82	496131	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.76	65	364145	11.354	ng		0.01
Spiked Amount 12.500			Recovery = 90.80%				
57) Toluene-d8 (SS2)	13.16	98	1319199	12.551	ng		0.00
Spiked Amount 12.500			Recovery = 100.40%				
73) Bromofluorobenzene (SS3)	15.62	174	522629	12.428	ng		0.00
Spiked Amount 12.500			Recovery = 99.44%				
Target Compounds							Qvalue
2) Propene	1.90	42	1630964	44.961	ng		100
3) Dichlorodifluoromethan...	2.03	85	2795082	53.484	ng		100
4) Chloromethane	2.26	50	2255030	72.319	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	1682996	58.553	ng		99
6) Vinyl Chloride	2.61	62	2266456	57.996	ng		100
7) 1,3-Butadiene	2.84	54	2199400	78.198	ng		100
8) Bromomethane	3.21	94	1368852	56.711	ng		100
9) Chloroethane	3.53	64	1239510	56.743	ng		100
10) Ethanol	4.12	45	6047528	329.584	ng		99
11) Acetonitrile	4.25	41	3139788	49.126	ng		99
12) Acrolein	4.38	56	1027493	62.396	ng		100
13) Acetone	4.63	58	6146051	284.903	ng		96
14) Trichlorofluoromethane	4.77	101	2505715	51.717	ng		100
15) 2-Propanol (Isopropanol)	5.30	45	9230471	146.453	ng		100
16) Acrylonitrile	5.45	53	2263904	59.503	ng		100
17) 1,1-Dichloroethene	5.80	96	1611455	61.604	ng		100
18) 2-Methyl-2-Propanol (t...	6.23	59	9038682	121.255	ng		99
19) Methylene Chloride	6.15	84	1644244	57.258	ng		99
20) 3-Chloro-1-propene (Al...	6.29	41	2654067	45.578	ng		96
21) Trichlorotrifluoroethane	6.59	151	1496805	58.943	ng		100
22) Carbon Disulfide	6.21	76	5739916	56.643	ng		99
23) trans-1,2-Dichloroethene	7.49	61	2313488	57.323	ng		100
24) 1,1-Dichloroethane	7.74	63	2800472	54.839	ng		99
25) Methyl tert-Butyl Ether	7.88	73	4799437	53.850	ng		99
26) Vinyl Acetate	8.14	86	2358182	278.988	ng	#	85
27) 2-Butanone (MEK)	8.32	72	1167525	53.826	ng		97
28) cis-1,2-Dichloroethene	8.78	61	2215394	58.565	ng		100
29) Diisopropyl Ether	9.14	87	1593089	58.335	ng	#	96
30) Ethyl Acetate	9.18	61	1161898	113.250	ng		98
31) n-Hexane	9.06	57	2193409	41.520	ng		100
32) Chloroform	9.13	83	2651276	56.312	ng		100
34) Tetrahydrofuran (THF)	9.48	72	1142640	59.748	ng		99
35) Ethyl tert-Butyl Ether	9.70	87	2102704	55.903	ng		99
36) 1,2-Dichloroethane	9.86	62	1955127	53.670	ng		100
38) 1,1,1-Trichloroethane	10.09	97	2263857	55.406	ng		100
39) Isopropyl Acetate	10.65	61	2017241	121.383	ng	#	93
40) 1-Butanol	10.72	56	4269628	151.197	ng		99
41) Benzene	10.54	78	6005794	54.061	ng		99
42) Carbon Tetrachloride	10.68	117	2060995	60.357	ng		100
43) Cyclohexane	10.79	84	5061907	117.127	ng		99
44) tert-Amyl Methyl Ether	11.20	73	4841760	59.349	ng		100
45) 1,2-Dichloropropane	11.35	63	1583841	59.722	ng		100

Data File: I:\MS08\Data\2013_11\19\11191314.D
Acq On : 19 Nov 2013 17:32 Operator: EM/CD
Sample : 50ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

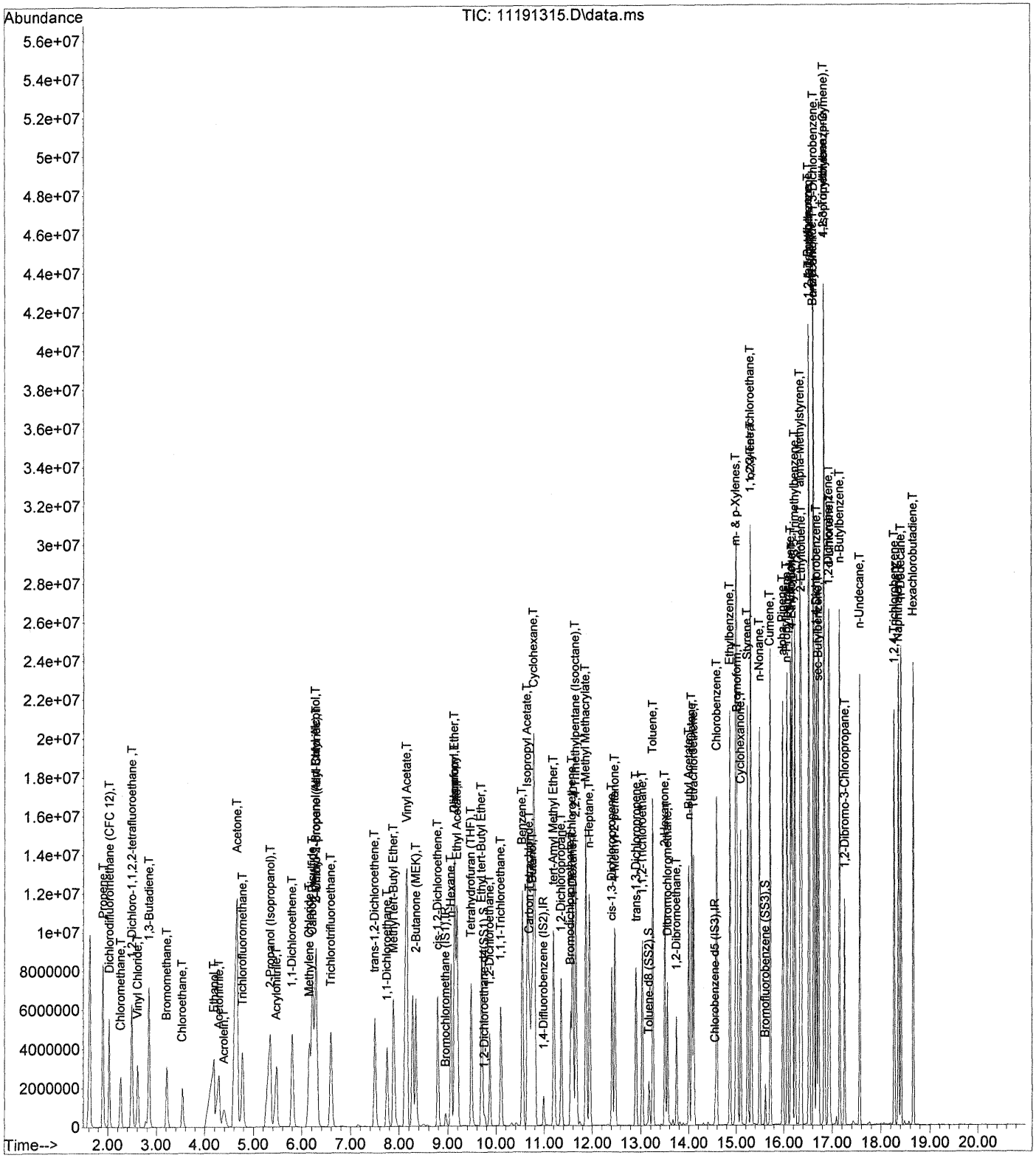
Quant Time: Nov 20 07:16:40 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.55	83	2100447	61.858 ng	100
47) Trichloroethene	11.58	130	1836872	60.607 ng	100
48) 1,4-Dioxane	11.59	88	1462973	72.884 ng	100
49) 2,2,4-Trimethylpentane...	11.66	57	7125763	56.884 ng	100
50) Methyl Methacrylate	11.86	100	1547875	121.435 ng	98
51) n-Heptane	11.95	71	1564685	53.109 ng	100
52) cis-1,3-Dichloropropene	12.41	75	2498821	59.968 ng	100
53) 4-Methyl-2-pentanone	12.47	58	1648339	62.209 ng	99
54) trans-1,3-Dichloropropene	12.90	75	2331556	60.610 ng	99
55) 1,1,2-Trichloroethane	13.02	97	1560641	63.027 ng	99
58) Toluene	13.24	91	6350360	58.079 ng	99
59) 2-Hexanone	13.49	43	4052373	62.948 ng	99
60) Dibromochloromethane	13.55	129	1879832	66.305 ng	100
61) 1,2-Dibromoethane	13.74	107	1794332	64.217 ng	100
62) n-Butyl Acetate	13.99	43	4630319	66.916 ng	99
63) n-Octane	14.06	57	1390062	54.623 ng	99
64) Tetrachloroethene	14.10	166	2025712	57.004 ng	100
65) Chlorobenzene	14.59	112	4467248	62.902 ng	100
66) Ethylbenzene	14.87	91	7319224	60.187 ng	99
67) m- & p-Xylenes	15.00	91	11510390	118.541 ng	98
68) Bromoform	15.02	173	1819187	69.059 ng	99
69) Styrene	15.24	104	5084279	68.957 ng	100
70) o-Xylene	15.31	91	5934137	58.868 ng	99
71) n-Nonane	15.50	43	3321546	52.049 ng	99
72) 1,1,2,2-Tetrachloroethane	15.31	83	2793432	61.672 ng	100
74) Cumene	15.72	105	7596578	57.907 ng	98
75) alpha-Pinene	15.99	93	4079027	65.888 ng	99
76) n-Propylbenzene	16.07	91	8639234	56.344 ng	98
77) 3-Ethyltoluene	16.15	105	7713802	57.596 ng	98
78) 4-Ethyltoluene	16.18	105	7210439	64.245 ng	98
79) 1,3,5-Trimethylbenzene	16.23	105	6417186	62.139 ng	98
80) alpha-Methylstyrene	16.34	118	3890501	77.881 ng	100
81) 2-Ethyltoluene	16.36	105	7463952	61.353 ng	98
82) 1,2,4-Trimethylbenzene	16.52	105	6597485	63.122 ng	98
83) n-Decane	16.62	57	3170288	52.389 ng	97
84) Benzyl Chloride	16.61	91	5982146	68.532 ng	98
85) 1,3-Dichlorobenzene	16.63	146	4295013	68.580 ng	99
86) 1,4-Dichlorobenzene	16.67	146	4157037	65.489 ng	99
87) sec-Butylbenzene	16.72	105	8466156	62.373 ng	98
88) 4-Isopropyltoluene (p-...	16.84	119	8149925	59.983 ng	98
89) 1,2,3-Trimethylbenzene	16.83	105	6782720	63.359 ng	98
90) 1,2-Dichlorobenzene	16.92	146	3944364	67.147 ng	100
91) d-Limonene	16.94	68	2667191	73.510 ng	99
92) 1,2-Dibromo-3-Chloropr...	17.25	157	1611412	71.899 ng	98
93) n-Undecane	17.57	57	3574529	56.256 ng	99
94) 1,2,4-Trichlorobenzene	18.27	180	3307144	73.024 ng	99
95) Naphthalene	18.36	128	9590378	71.918 ng	98
96) n-Dodecane	18.41	57	3719341	65.703 ng	98
97) Hexachlorobutadiene	18.66	225	2046136	66.527 ng	100
98) Cyclohexanone	15.09	55	2741583	77.489 ng	100
99) tert-Butylbenzene	16.52	119	6699260	63.669 ng	98
100) n-Butylbenzene	17.15	91	6630251	64.839 ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191315.D
Acq On : 19 Nov 2013 18:01 Operator: EM/Cd
Sample : 100ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:37:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191315.D
Acq On : 19 Nov 2013 18:01 Operator: EM/Cd
Sample : 100ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:37:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EOM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.95	130	277165	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.99	114	1323000	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.56	82	513524	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.76	65	376256	11.451	ng		0.02
Spiked Amount 12.500			Recovery = 91.60%				
57) Toluene-d8 (SS2)	13.16	98	1364060	12.538	ng		0.00
Spiked Amount 12.500			Recovery = 100.32%				
73) Bromofluorobenzene (SS3)	15.62	174	540156	12.409	ng		0.00
Spiked Amount 12.500			Recovery = 99.28%				
Target Compounds							Qvalue
2) Propene	1.90	42	3720438	100.105	ng		99
3) Dichlorodifluoromethan...	2.03	85	5443136	101.660	ng		99
4) Chloromethane	2.26	50	3961997	124.019	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	2.49	135	3333693	113.206	ng		100
6) Vinyl Chloride	2.61	62	4414600	110.259	ng		100
7) 1,3-Butadiene	2.85	54	4315456	149.759	ng		99
8) Bromomethane	3.22	94	2684344	108.547	ng		100
9) Chloroethane	3.54	64	2435933	108.843	ng		99
10) Ethanol	4.19	45	11778732m	626.557	ng		
11) Acetonitrile	4.29	41	6489573	99.106	ng		98
12) Acrolein	4.39	56	2014109	119.381	ng		100
13) Acetone	4.67	58	11698025	529.283	ng		90
14) Trichlorofluoromethane	4.78	101	5046379	101.661	ng		100
15) 2-Propanol (Isopropanol)	5.35	45	15388421	238.311	ng		100
16) Acrylonitrile	5.48	53	4450681	114.177	ng		100
17) 1,1-Dichloroethene	5.80	96	3177710	118.571	ng		99
18) 2-Methyl-2-Propanol (t...	6.29	59	17257753	225.972	ng	#	69
19) Methylene Chloride	6.16	84	3226835	109.678	ng		98
20) 3-Chloro-1-propene (Al...	6.30	41	8700049	145.827	ng		78
21) Trichlorotrifluoroethane	6.60	151	2980923	114.575	ng		100
22) Carbon Disulfide	6.22	76	11211082	107.985	ng		99
23) trans-1,2-Dichloroethene	7.50	61	4487093	108.517	ng		99
24) 1,1-Dichloroethane	7.75	63	5521151	105.527	ng		99
25) Methyl tert-Butyl Ether	7.89	73	9424917	103.217	ng		99
26) Vinyl Acetate	8.17	86	4829618	557.693	ng	#	1
27) 2-Butanone (MEK)	8.35	72	2349895	105.742	ng		94
28) cis-1,2-Dichloroethene	8.79	61	4333981	111.827	ng		99
29) Diisopropyl Ether	9.15	87	3178216	113.591	ng	#	92
30) Ethyl Acetate	9.20	61	2355089	224.053	ng		97
31) n-Hexane	9.07	57	4667858	86.245	ng		100
32) Chloroform	9.15	83	5233792	108.502	ng		100
34) Tetrahydrofuran (THF)	9.49	72	2287185	116.733	ng		98
35) Ethyl tert-Butyl Ether	9.71	87	4169640	108.201	ng		96
36) 1,2-Dichloroethane	9.87	62	3823141	102.436	ng		99
38) 1,1,1-Trichloroethane	10.10	97	4505291	106.023	ng		99
39) Isopropyl Acetate	10.66	61	3959069	229.065	ng	#	80
40) 1-Butanol	10.77	56	9429140	321.066	ng		96
41) Benzene	10.55	78	11760490	101.791	ng		98
42) Carbon Tetrachloride	10.69	117	4159727	117.134	ng		100
43) Cyclohexane	10.80	84	9931609	220.968	ng		88
44) tert-Amyl Methyl Ether	11.21	73	9371068	110.451	ng		99
45) 1,2-Dichloropropane	11.36	63	3133511	113.611	ng		99

Data File: I:\MS08\Data\2013_11\19\11191315.D
Acq On : 19 Nov 2013 18:01 Operator: EM/Cd
Sample : 100ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

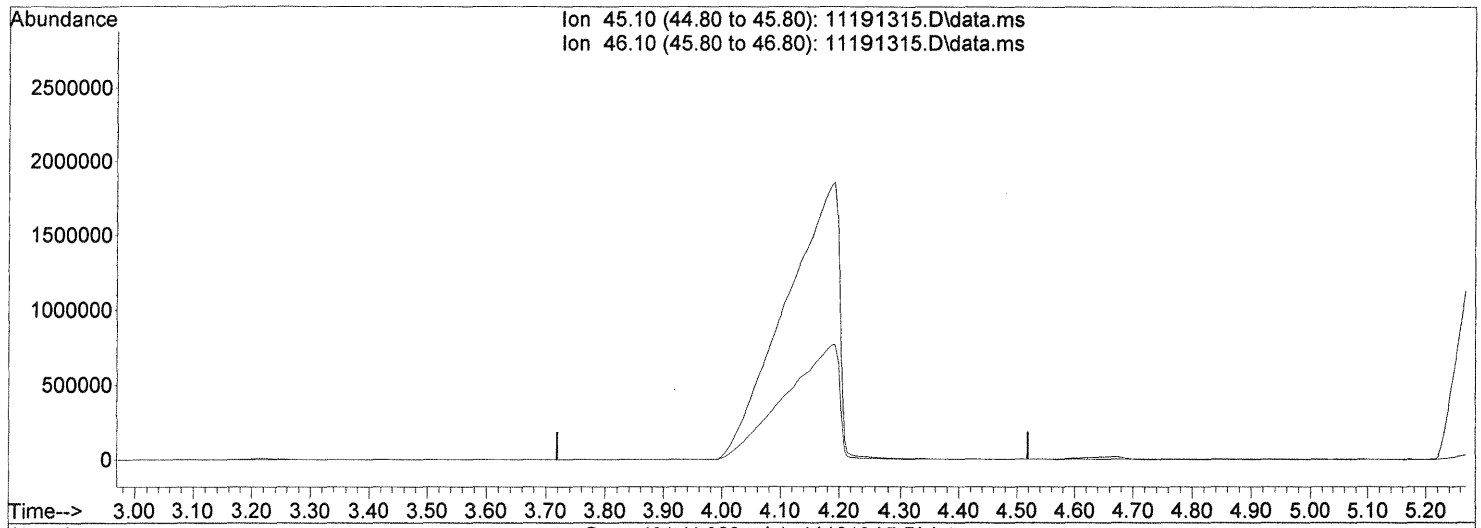
Quant Time: Nov 20 07:37:29 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

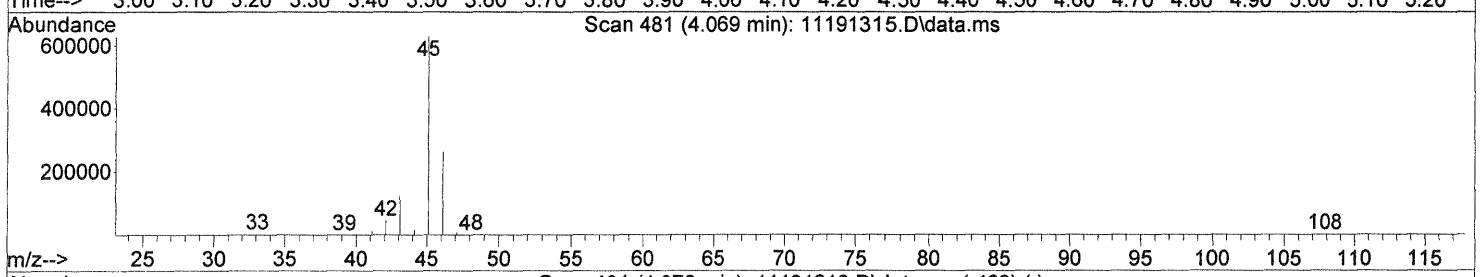
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.55	83	4138718	117.196	ng	99
47) Trichloroethene	11.59	130	3733516	118.447	ng	100
48) 1,4-Dioxane	11.61	88	2920066	139.880	ng	100
49) 2,2,4-Trimethylpentane...	11.67	57	13414535	102.968	ng	99
50) Methyl Methacrylate	11.88	100	3089963	233.093	ng	95
51) n-Heptane	11.95	71	3171243	103.500	ng	99
52) cis-1,3-Dichloropropene	12.42	75	4907107	113.235	ng	99
53) 4-Methyl-2-pentanone	12.48	58	3235953	117.428	ng	96
54) trans-1,3-Dichloropropene	12.90	75	4570429	114.241	ng	99
55) 1,1,2-Trichloroethane	13.03	97	3088099	119.918	ng	100
58) Toluene	13.25	91	12042314	106.406	ng	97
59) 2-Hexanone	13.50	43	7653499	114.860	ng	97
60) Dibromochloromethane	13.56	129	3741833	127.510	ng	100
61) 1,2-Dibromoethane	13.74	107	3553987	122.884	ng	100
62) n-Butyl Acetate	14.01	43	8547212	119.338	ng	96
63) n-Octane	14.06	57	2697300	102.401	ng	97
64) Tetrachloroethene	14.11	166	4099460	111.453	ng	99
65) Chlorobenzene	14.60	112	8570819	116.596	ng	98
66) Ethylbenzene	14.87	91	13114172	104.187	ng	93
67) m- & p-Xylenes	15.00	91	19872676	197.729	ng	90
68) Bromoform	15.02	173	3729762	136.792	ng	98
69) Styrene	15.24	104	9648546	126.428	ng	98
70) o-Xylene	15.32	91	10966378	105.105	ng	95
71) n-Nonane	15.50	43	6042055	91.473	ng	95
72) 1,1,2,2-Tetrachloroethane	15.31	83	5170635	110.289	ng	99
74) Cumene	15.72	105	13081431	96.339	ng	90
75) alpha-Pinene	15.99	93	7752547	120.984	ng	100
76) n-Propylbenzene	16.07	91	13739067	86.569	ng	87
77) 3-Ethyltoluene	16.15	105	13738518	99.107	ng	91
78) 4-Ethyltoluene	16.18	105	11959634	102.951	ng	86
79) 1,3,5-Trimethylbenzene	16.24	105	11710215	109.553	ng	93
80) alpha-Methylstyrene	16.35	118	7452598	144.134	ng	99
81) 2-Ethyltoluene	16.37	105	13205194	104.869	ng	91
82) 1,2,4-Trimethylbenzene	16.53	105	11843290	109.474	ng	94
83) n-Decane	16.63	57	4844382	77.341	ng	90
84) Benzyl Chloride	16.62	91	10275888	113.733	ng	91
85) 1,3-Dichlorobenzene	16.63	146	8374600	129.190	ng	98
86) 1,4-Dichlorobenzene	16.68	146	7964462	121.221	ng	97
87) sec-Butylbenzene	16.72	105	13753981	97.898	ng	89
88) 4-Isopropyltoluene (p-...	16.84	119	13114083	93.250	ng	88
89) 1,2,3-Trimethylbenzene	16.84	105	12137702	109.541	ng	94
90) 1,2-Dichlorobenzene	16.93	146	7676865	126.262	ng	98
91) d-Limonene	16.95	68	4852910	129.219	ng	94
92) 1,2-Dibromo-3-Chloropr...	17.26	157	3167222	136.531	ng	95
93) n-Undecane	17.57	57	6377322	96.967	ng	96
94) 1,2,4-Trichlorobenzene	18.28	180	6466060	137.939	ng	99
95) Naphthalene	18.36	128	14363257	104.061	ng	89
96) n-Dodecane	18.41	57	6613737	112.876	ng	94
97) Hexachlorobutadiene	18.66	225	4159343	130.653	ng	99
98) Cyclohexanone	15.10	55	5222824	142.620	ng	98
99) tert-Butylbenzene	16.53	119	12313454	113.062	ng	95
100) n-Butylbenzene	17.16	91	11668905	110.248	ng	93

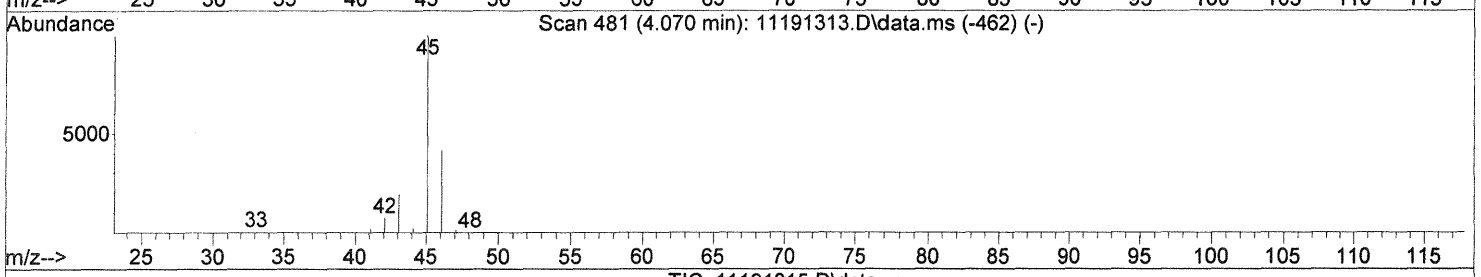
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2013_11\19\11191315.D
Acq On : 19 Nov 2013 18:01 Operator: EM/Cd
Sample : 100ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:16:47 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191315.D\data.ms

(10) Ethanol (T)

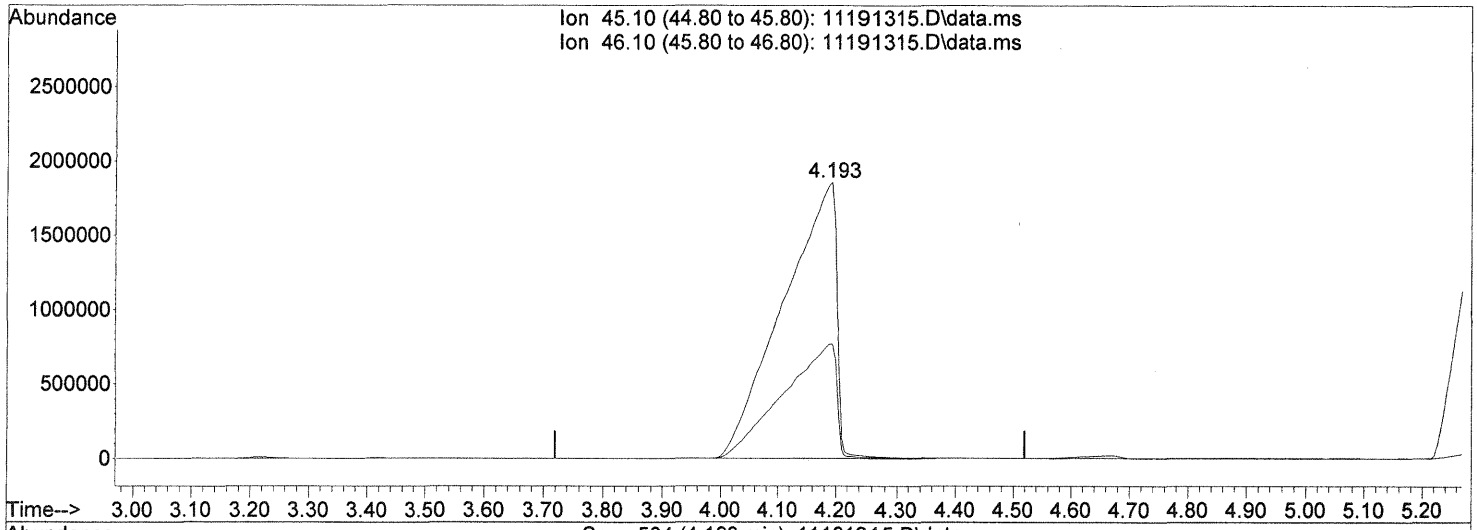
4.070min (-4.070) 0.00ng

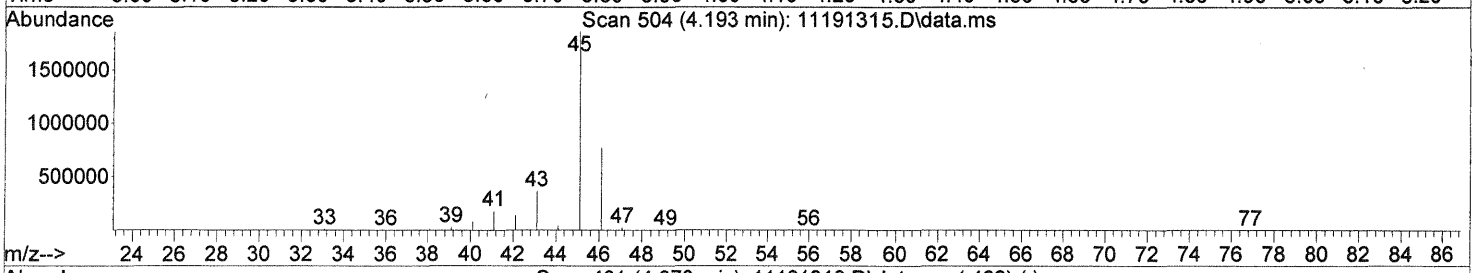
response 0

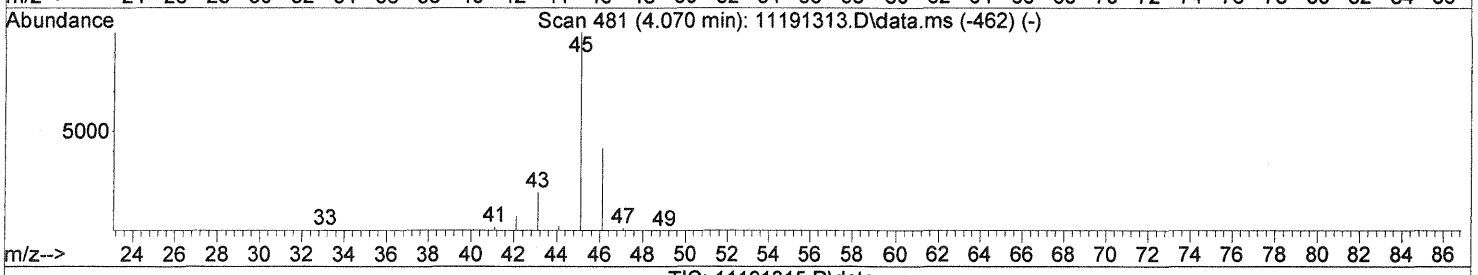
Ion	Exp%	Act%
45.10	100	0.00
46.10	41.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File: I:\MS08\Data\2013_11\19\11191315.D
Acq On : 19 Nov 2013 18:01 Operator: EM/Cd
Sample : 100ng TO-15 ICAL Std
Misc : S25-11181301/S25-11181303 (12/17)
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:16:47 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 07:15:01 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 11191315.D\data.ms

(10) Ethanol (T)

4.193min (+0.124) 626.56ng m

response 11778732

Ion	Exp%	Act%
45.10	100	100
46.10	41.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

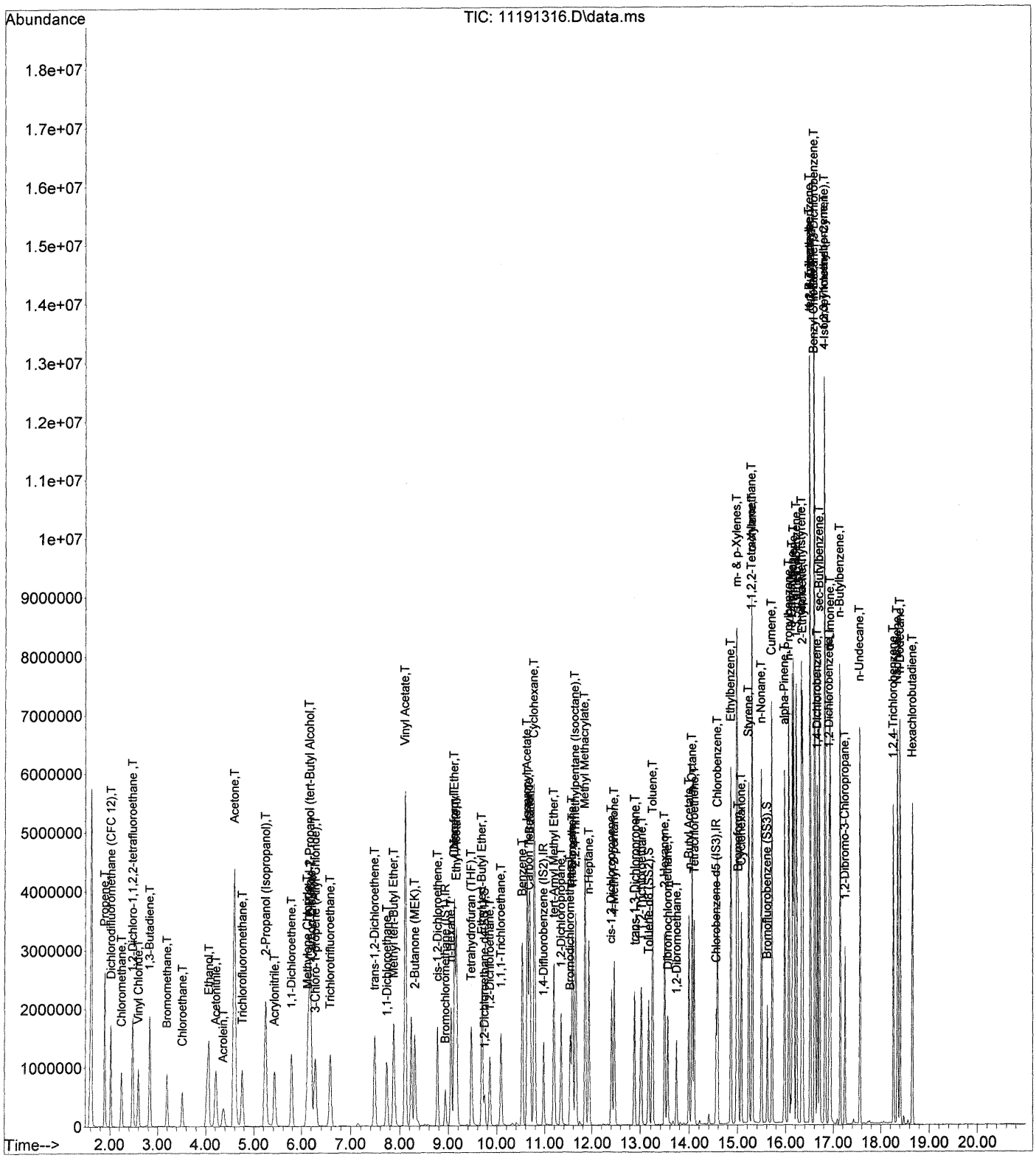
MP
CD 11/20/13

11/21/13

EM 11/22/13

Data File: I:\MS08\Data\2013_11\19\11191316.D
Acq On : 19 Nov 2013 18:30 Operator: EM/CD
Sample : 25ng TO-15 ICV Std (125mL)
Misc : S25-11181301/S25-11181305 (12/17)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 21 09:37:46 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 21 09:17:24 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2013_11\19\11191316.D
Acq On : 19 Nov 2013 18:30 Operator: EM/CD
Sample : 25ng TO-15 ICV Std (125mL)
Misc : S25-11181301/S25-11181305 (12/17)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 21 09:37:46 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 21 09:17:24 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

EM 11/22/13

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.94	130	260850	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.98	114	1220477	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.56	82	485955	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	348022	12.275	ng		0.01
Spiked Amount 12.500			Recovery = 98.16%				
57) Toluene-d8 (SS2)	13.16	98	1285427	12.417	ng		0.00
Spiked Amount 12.500			Recovery = 99.36%				
73) Bromofluorobenzene (SS3)	15.61	174	526653	12.676	ng		0.00
Spiked Amount 12.500			Recovery = 101.44%				
Target Compounds							Qvalue
2) Propene	1.89	42	823330	22.375	ng		99
3) Dichlorodifluoromethan...	2.02	85	1418672	22.796	ng		100
4) Chloromethane	2.24	50	1154124	22.533	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.48	135	835287	22.119	ng		99
6) Vinyl Chloride	2.60	62	1147185	22.490	ng		100
7) 1,3-Butadiene	2.83	54	983100	24.610	ng		100
8) Bromomethane	3.20	94	706918	22.443	ng		100
9) Chloroethane	3.52	64	639323	22.492	ng		100
10) Ethanol	4.07	45	2993825	118.202	ng		100
11) Acetonitrile	4.21	41	1572675	22.575	ng		100
12) Acrolein	4.37	56	535670	25.168	ng		99
13) Acetone	4.60	58	3133508	123.463	ng		99
14) Trichlorofluoromethane	4.76	101	1195694	20.752	ng		100
15) 2-Propanol (Isopropanol)	5.24	45	4438340	48.098	ng		100
16) Acrylonitrile	5.42	53	1110197	25.473	ng		99
17) 1,1-Dichloroethene	5.79	96	783765	23.946	ng		100
18) 2-Methyl-2-Propanol (t...	6.17	59	4310086	47.659	ng		100
19) Methylene Chloride	6.13	84	795230	23.187	ng		100
20) 3-Chloro-1-propene (Al...	6.28	41	1370441	24.095	ng		99
21) Trichlorotrifluoroethane	6.58	151	727630	23.988	ng		99
22) Carbon Disulfide	6.20	76	2868865	23.681	ng		100
23) trans-1,2-Dichloroethene	7.49	61	1156564	24.768	ng		99
24) 1,1-Dichloroethane	7.74	63	1364761	23.068	ng		100
25) Methyl tert-Butyl Ether	7.87	73	2395727	23.901	ng		100
26) Vinyl Acetate	8.12	86	1144773	120.936	ng		100
27) 2-Butanone (MEK)	8.31	72	567335	23.624	ng		100
28) cis-1,2-Dichloroethene	8.78	61	1082722	24.729	ng		100
29) Diisopropyl Ether	9.13	87	790975	25.746	ng	#	99
30) Ethyl Acetate	9.17	61	568654	47.280	ng		97
31) n-Hexane	9.06	57	1090133	22.454	ng		100
32) Chloroform	9.13	83	1287314	23.266	ng		100
34) Tetrahydrofuran (THF)	9.47	72	526414	23.267	ng		99
35) Ethyl tert-Butyl Ether	9.69	87	1044068	23.975	ng		100
36) 1,2-Dichloroethane	9.86	62	961438	23.722	ng		100
38) 1,1,1-Trichloroethane	10.09	97	1124229	23.922	ng		100
39) Isopropyl Acetate	10.64	61	990324	50.303	ng		99
40) 1-Butanol	10.69	56	1934336	58.899	ng		99
41) Benzene	10.54	78	2975582	25.691	ng		100
42) Carbon Tetrachloride	10.68	117	1020031	25.509	ng		100
43) Cyclohexane	10.79	84	2538846	48.399	ng		100
44) tert-Amyl Methyl Ether	11.20	73	2422295	24.966	ng		100
45) 1,2-Dichloropropane	11.35	63	775287	24.276	ng		99

Data File: I:\MS08\Data\2013_11\19\11191316.D
Acq On : 19 Nov 2013 18:30 Operator: EM/CD
Sample : 25ng TO-15 ICV Std (125mL)
Misc : S25-11181301/S25-11181305 (12/17)
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Nov 21 09:37:46 2013
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Nov 21 09:17:24 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.54	83	1063529	26.633 ng	100
47) Trichloroethene	11.58	130	910945	24.083 ng	99
48) 1,4-Dioxane	11.58	88	690083	26.107 ng	100
49) 2,2,4-Trimethylpentane...	11.65	57	3571921	23.724 ng	100
50) Methyl Methacrylate	11.86	100	762968	50.208 ng	100
51) n-Heptane	11.94	71	799715	23.588 ng	99
52) cis-1,3-Dichloropropene	12.41	75	1376917	28.021 ng	100
53) 4-Methyl-2-pentanone	12.47	58	802994	24.919 ng	100
54) trans-1,3-Dichloropropene	12.89	75	1221754	27.674 ng	100
55) 1,1,2-Trichloroethane	13.02	97	774253	25.388 ng	100
58) Toluene	13.24	91	3188017	23.631 ng	100
59) 2-Hexanone	13.48	43	1963750	26.229 ng	100
60) Dibromochloromethane	13.55	129	963112	27.810 ng	99
61) 1,2-Dibromoethane	13.74	107	892700	25.646 ng	99
62) n-Butyl Acetate	13.99	43	2198073	26.348 ng	100
63) n-Octane	14.06	57	709673	23.801 ng	99
64) Tetrachloroethene	14.10	166	994776	22.680 ng	100
65) Chlorobenzene	14.59	112	2248702	25.223 ng	100
66) Ethylbenzene	14.87	91	3710001	24.780 ng	100
67) m- & p-Xylenes	15.00	91	5883378	49.613 ng	100
68) Bromoform	15.02	173	949152	29.712 ng	100
69) Styrene	15.24	104	2541393	26.631 ng	100
70) o-Xylene	15.31	91	3018736	24.368 ng	100
71) n-Nonane	15.50	43	1743633	24.020 ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1396508	25.285 ng	100
74) Cumene	15.72	105	3912013	24.030 ng	100
75) alpha-Pinene	15.98	93	2045654	24.877 ng	100
76) n-Propylbenzene	16.07	91	4536152	24.259 ng	100
77) 3-Ethyltoluene	16.15	105	4222491	26.582 ng	100
78) 4-Ethyltoluene	16.17	105	3527072	24.753 ng	100
79) 1,3,5-Trimethylbenzene	16.23	105	3273761	25.773 ng	100
80) alpha-Methylstyrene	16.34	118	1922043	26.660 ng	99
81) 2-Ethyltoluene	16.36	105	3822316	25.552 ng	100
82) 1,2,4-Trimethylbenzene	16.52	105	3313887	25.452 ng	100
83) n-Decane	16.61	57	1750663	24.708 ng	99
84) Benzyl Chloride	16.61	91	3130005	31.485 ng	100
85) 1,3-Dichlorobenzene	16.62	146	2090189	27.031 ng	100
86) 1,4-Dichlorobenzene	16.67	146	2068464	25.884 ng	99
87) sec-Butylbenzene	16.72	105	4414163	26.522 ng	100
88) 4-Isopropyltoluene (p-...	16.84	119	4166684	25.008 ng	100
89) 1,2,3-Trimethylbenzene	16.83	105	3443743	26.234 ng	100
90) 1,2-Dichlorobenzene	16.92	146	1956672	26.381 ng	100
91) d-Limonene	16.94	68	1346479	26.721 ng	100
92) 1,2-Dibromo-3-Chloropr...	17.25	157	766424	28.161 ng	100
93) n-Undecane	17.56	57	1862008	25.152 ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1486239	25.092 ng	100
95) Naphthalene	18.35	128	4469194	25.546 ng	100
96) n-Dodecane	18.41	57	1825627	24.994 ng	100
97) Hexachlorobutadiene	18.66	225	960178	25.568 ng	100
98) Cyclohexanone	15.08	55	1227533	26.154 ng	100
99) tert-Butylbenzene	16.52	119	3386921	25.979 ng	100
100) n-Butylbenzene	17.15	91	3413732	26.671 ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

INITIAL CALIBRATION VERIFICATION CHECK SHEET

Data File Name: **11191316.D**
Data File Path: **I:\MS08\Data\2013_11\19**
Operator: **EM/CD**
Date Acquired: **11/19/2013** **18:30**

Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15 ICV Std (125mL)**
Misc Info: **S25-11181301/S25-11181305 (**
Instrument Name: **Instrument #MS08**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
2)	Propene	1.89	22.4	25.00	90	70	130	*
3)	Dichlorodifluoromethane (CFC 1	2.02	22.8	25.50	89	70	130	*
4)	Chloromethane	2.24	22.5	24.75	91	70	130	*
5)	1,2-Dichloro-1,1,2,2-tetrafluoroet	2.48	22.1	25.50	87	70	130	*
6)	Vinyl Chloride	2.60	22.5	25.00	90	70	130	*
7)	1,3-Butadiene	2.83	24.6	26.50	93	70	130	*
8)	Bromomethane	3.20	22.4	25.00	90	70	130	*
9)	Chloroethane	3.52	22.5	25.25	89	70	130	*
10)	Ethanol	4.07	118	127.75	92	70	130	*
11)	Acetonitrile	4.21	22.6	25.25	90	70	130	*
12)	Acrolein	4.37	25.2	26.75	94	70	130	*
13)	Acetone	4.60	123	134.50	91	70	130	*
14)	Trichlorofluoromethane	4.76	20.8	24.75	84	70	130	*
15)	2-Propanol (Isopropanol)	5.24	48.1	52.50	92	70	130	*
16)	Acrylonitrile	5.42	25.5	26.00	98	70	130	*
17)	1,1-Dichloroethene	5.79	23.9	26.75	89	70	130	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	6.17	47.7	52.25	91	70	130	*
19)	Methylene Chloride	6.13	23.2	27.00	86	70	130	*
20)	3-Chloro-1-propene (Allyl Chlorid	6.28	24.1	27.00	89	70	130	*
21)	Trichlorotrifluoroethane	6.58	24.0	26.75	90	70	130	*
22)	Carbon Disulfide	6.20	23.7	24.50	97	70	130	*
23)	trans-1,2-Dichloroethene	7.49	24.8	26.50	94	70	130	*
24)	1,1-Dichloroethane	7.74	23.1	26.00	89	70	130	*
25)	Methyl tert-Butyl Ether	7.87	23.9	26.50	90	70	130	*
26)	Vinyl Acetate	8.12	121	128.00	95	70	130	*
27)	2-Butanone (MEK)	8.31	23.6	27.25	87	70	130	*
28)	cis-1,2-Dichloroethene	8.78	24.7	26.75	92	70	130	*
29)	Diisopropyl Ether	9.13	25.7	27.25	94	70	130	*
30)	Ethyl Acetate	9.17	47.3	53.25	89	70	130	*
31)	n-Hexane	9.06	22.5	26.25	86	70	130	*
32)	Chloroform	9.13	23.3	26.75	87	70	130	*
34)	Tetrahydrofuran (THF)	9.47	23.3	25.75	90	70	130	*
35)	Ethyl tert-Butyl Ether	9.69	24.0	26.50	91	70	130	*
36)	1,2-Dichloroethane	9.86	23.7	26.25	90	70	130	*
38)	1,1,1-Trichloroethane	10.09	23.9	25.75	93	70	130	*
39)	Isopropyl Acetate	10.64	50.3	54.50	92	70	130	*
40)	1-Butanol	10.69	58.9	54.75	108	70	130	*
41)	Benzene	10.54	25.7	27.50	93	70	130	*
42)	Carbon Tetrachloride	10.68	25.5	26.25	97	70	130	*
43)	Cyclohexane	10.79	48.4	52.50	92	70	130	*
44)	tert-Amyl Methyl Ether	11.20	25.0	26.25	95	70	130	*
45)	1,2-Dichloropropane	11.35	24.3	26.50	92	70	130	*
46)	Bromodichloromethane	11.54	26.6	26.75	99	70	130	*
47)	Trichloroethene	11.58	24.1	26.00	93	70	130	*
48)	1,4-Dioxane	11.58	26.1	27.25	96	70	130	*
49)	2,2,4-Trimethylpentane (Isooctane)	11.65	23.7	26.00	91	70	130	*

CD 11/21/13

11/21/13

INITIAL CALIBRATION VERIFICATION CHECK SHEET

Data File Name: **11191316.D**
Data File Path: **I:\MS08\Data\2013_11\19**
Operator: **EM/CD**
Date Acquired: **11/19/2013** **18:30**

Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15 ICV Std (125mL)**
Misc Info: **S25-11181301/S25-11181305 (**
Instrument Name: **Instrument #MS08**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
50)	**Methyl Methacrylate**	**11.86**	**50.2**	**52.50**	96	**70**	**130**	*
51)	**n-Heptane**	**11.94**	**23.6**	**26.75**	88	**70**	**130**	*
52)	**cis-1,3-Dichloropropene**	**12.41**	**28.0**	**28.25**	99	**70**	**130**	*
53)	**4-Methyl-2-pentanone**	**12.47**	**24.9**	**27.25**	91	**70**	**130**	*
54)	**trans-1,3-Dichloropropene**	**12.89**	**27.7**	**27.00**	103	**70**	**130**	*
55)	**1,1,2-Trichloroethane**	**13.02**	**25.4**	**26.25**	97	**70**	**130**	*
58)	**Toluene**	**13.24**	**23.6**	**26.25**	90	**70**	**130**	*
59)	**2-Hexanone**	**13.48**	**26.2**	**27.75**	94	**70**	**130**	*
60)	**Dibromochloromethane**	**13.55**	**27.8**	**27.50**	101	**70**	**130**	*
61)	**1,2-Dibromoethane**	**13.74**	**25.6**	**27.00**	95	**70**	**130**	*
62)	**n-Butyl Acetate**	**13.99**	**26.3**	**28.00**	94	**70**	**130**	*
63)	**n-Octane**	**14.06**	**23.8**	**26.00**	92	**70**	**130**	*
64)	**Tetrachloroethene**	**14.10**	**22.7**	**24.50**	93	**70**	**130**	*
65)	**Chlorobenzene**	**14.59**	**25.2**	**27.00**	93	**70**	**130**	*
66)	**Ethylbenzene**	**14.87**	**24.8**	**26.50**	94	**70**	**130**	*
67)	**m- & p-Xylenes**	**15.00**	**49.6**	**52.50**	94	**70**	**130**	*
68)	**Bromoform**	**15.02**	**29.7**	**27.00**	110	**70**	**130**	*
69)	**Styrene**	**15.24**	**26.6**	**27.25**	98	**70**	**130**	*
70)	**o-Xylene**	**15.31**	**24.4**	**25.75**	95	**70**	**130**	*
71)	**n-Nonane**	**15.50**	**24.0**	**25.75**	93	**70**	**130**	*
72)	**1,1,2,2-Tetrachloroethane**	**15.30**	**25.3**	**25.25**	100	**70**	**130**	*
74)	**Cumene**	**15.72**	**24.0**	**25.50**	94	**70**	**130**	*
75)	**alpha-Pinene**	**15.98**	**24.9**	**26.00**	96	**70**	**130**	*
76)	**n-Propylbenzene**	**16.07**	**24.3**	**25.25**	96	**70**	**130**	*
77)	3-Ethyltoluene	16.15	26.6	26.50	100	**70**	**130**	*
78)	**4-Ethyltoluene**	**16.17**	**24.8**	**26.50**	**94**	**70**	**130**	*
79)	**1,3,5-Trimethylbenzene**	**16.23**	**25.8**	**26.50**	**97**	**70**	**130**	*
80)	alpha-Methylstyrene	16.34	26.7	26.00	**103**	**70**	**130**	*
81)	2-Ethyltoluene	16.36	25.6	26.25	**98**	**70**	**130**	*
82)	**1,2,4-Trimethylbenzene**	**16.52**	**25.5**	**26.50**	**96**	**70**	**130**	*
83)	n-Decane	16.61	24.7	25.75	**96**	**70**	**130**	*
84)	**Benzyl Chloride**	**16.61**	**31.5**	**27.75**	**114**	**70**	**130**	*
85)	**1,3-Dichlorobenzene**	**16.62**	**27.0**	**27.75**	**97**	**70**	**130**	*
86)	**1,4-Dichlorobenzene**	**16.67**	**25.9**	**26.75**	**97**	**70**	**130**	*
87)	sec-Butylbenzene	16.72	26.5	27.00	**98**	**70**	**130**	*
88)	4-Isopropyltoluene (p-Cymene)	16.84	25.0	25.25	**99**	**70**	**130**	*
89)	1,2,3-Trimethylbenzene	16.83	26.2	26.50	**99**	**70**	**130**	*
90)	**1,2-Dichlorobenzene**	**16.92**	**26.4**	**27.25**	**97**	**70**	**130**	*
91)	**d-Limonene**	**16.94**	**26.7**	**26.25**	**102**	**70**	**130**	*
92)	**1,2-Dibromo-3-Chloropropane**	**17.25**	**28.2**	**26.50**	**106**	**70**	**130**	*
93)	n-Undecane	17.56	25.2	25.75	**98**	**70**	**130**	*
94)	**1,2,4-Trichlorobenzene**	**18.27**	**25.1**	**27.50**	**91**	**70**	**130**	*
95)	**Naphthalene**	**18.35**	**25.5**	**25.50**	**100**	**70**	**130**	*
96)	n-Dodecane	18.41	25.0	26.00	**96**	**70**	**130**	*
97)	**Hexachlorobutadiene**	**18.66**	**25.6**	**27.25**	**94**	**70**	**130**	*
98)	Cyclohexanone	15.08	26.2	27.50	95	**70**	**130**	*
99)	tert-Butylbenzene	16.52	26.0	26.75	97	**70**	**130**	*
100)	n-Butylbenzene	17.15	26.7	27.50	97	**70**	**130**	*

Bold = 75 Compound List
*** = Pass**

CD 11/21/13

11/21/13

I:\MS08\0-Instrument Info\0-Security Certificates\ICV_07081301.CRT
11/21/2013 9:38 AM

Response Factor Report Instrument #MS08

Method Path : I:\MS08\Methods\
Method File : ACF8111913.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 13:26:29 2013
Response Via : Initial Calibration

Calibration Files
0.40=11191319.D 1.0 =11191320.D 2.5 =11191321.D 5.0 =11191322.D 25 =11191323.D 50 =11191324.D
100 =11191325.D

		Compound	0.40	1.0	2.5	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------								
2)	T	Chloropentaflu...	1.807	1.689	1.605	1.428	1.603	1.386	1.258	1.540	12.38
3)	T	1,1,1,2-Tetraf...	1.329	1.209	1.163	1.068	1.188	1.020	0.925	1.129	11.88
4)	T	1,1-Difluoroet...	1.317	1.254	1.230	1.097	1.208	1.024	0.893	1.146	13.00
5)	T	Chlorodifluoro...	0.382	0.365	0.368	0.328	0.365	0.311	0.283	0.343	10.59
6)	T	1-Chloro-1,1-D...	2.761	2.475	2.470	2.201	2.407	2.026	1.819	2.308	13.69
7)	T	Dichlorofluoro...	3.346	3.037	2.985	2.511	2.930	2.518	2.280	2.801	13.35
8)	T	Vinylbromide	1.385	1.291	1.306	1.098	1.294	1.119	1.015	1.215	11.23
9)	T	2,2-Dichloro-1...	2.245	2.019	1.993	1.730	1.942	1.685	1.524	1.877	13.00
10)	T	2-Methylbutane	1.818	1.647	1.658	1.425	1.587	1.364	1.225	1.532	13.28
11)	T	Methyl Acetate	3.871	3.551	3.546	3.144	3.599	3.082	2.817	3.373	10.87
12)	T	2-Methylpentane	1.806	1.617	1.628	1.432	1.513	1.309	1.204	1.501	13.68
13)	T	2,2-Dichloropr...	2.556	2.374	2.321	2.055	2.261	1.938	1.763	2.181	12.61
14)	T	1,1-Dichloropr...	2.374	2.144	2.159	1.900	2.042	1.783	1.632	2.005	12.55
15)	T	Thiophene	3.728	3.429	3.389	2.977	3.295	2.846	2.594	3.180	12.29
16)	IR	1,4-Difluorobenzen...	----------ISTD----------								
17)	T	2,3-Dimethylpe...	0.664	0.604	0.607	0.524	0.596	0.512	0.473	0.569	11.78
18)	T	Dibromomethane	0.278	0.251	0.250	0.221	0.262	0.229	0.218	0.244	9.04
19)	IR	Chlorobenzene-d5 (...	----------ISTD----------								
20)	T	Methyl Cyclohe...	1.338	1.195	1.190	1.024	1.102	0.919	0.781	1.078	17.38
21)	T	1,3-Dichloropr...	1.410	1.261	1.268	1.095	1.202	1.003	0.858	1.157	16.02
22)	T	1,1,1,2-Tetrac...	0.862	0.728	0.752	0.664	0.736	0.620	0.539	0.700	14.82
23)	T	1-Chlorohexane	1.457	1.242	1.250	1.074	1.164	0.976	0.833	1.142	17.84
24)	T	1,2,3-Trichlor...	1.304	1.135	1.145	0.991	1.117	0.925	0.789	1.058	15.98
25)	T	Bromobenzene	1.607	1.403	1.400	1.204	1.349	1.115	0.943	1.289	16.97
26)	T	2-Chlorotoluene	2.798	2.560	2.547	2.187	2.436	2.009	1.651	2.313	16.87
27)	T	4-Chlorotoluene	2.926	2.573	2.598	2.251	2.504	2.070	1.703	2.375	16.92
28)	T	Indan	3.396	3.020	3.059	2.647	3.085	2.530	2.039	2.825	15.98
29)	T	Indene	2.273	2.040	2.080	1.801	2.672	2.215	1.840	2.132	13.87
30)	T	1,2,4,5-Tetram...	3.390	3.034	3.103	2.674	3.500	2.822	2.295	2.974	14.02
31)	T	1,2,3,4-Tetram...	3.426	3.104	3.123	2.696	3.316	2.765	2.075	2.929	15.73
32)	T	1,2,3,5-Tetram...	3.267	2.960	3.015	2.563	3.324	2.730	2.176	2.862	14.17
33)	T	1,2,3-Trichlor...	1.315	1.182	1.210	1.051	1.396	1.186	1.029	1.196	10.99

(#) = Out of Range

CD 11/20/13

AA 11/21/13

TO-15 CUSTOM COMPOUND LIST
ICAL CONCENTRATIONS

Std#:	Working Standards	
(1)	200 ng/L Working Std. ID:	S25-11141305
(2)	20 ng/L Working Std. ID:	S25-10221306

Injection Amts.(L):	0.020	0.025	0.050	0.125	0.250	0.125	0.250	0.500
Standards Used:	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)
Compounds/ Concentrations (ng):	0.4ng	0.5ng	1.0ng	2.5ng	5.0ng	25ng	50ng	100ng
Vinylbromide	0.404	0.505	1.010	2.525	5.05	25.25	50.5	101
2-Methylbutane (Isopentane)	0.420	0.525	1.050	2.625	5.25	26.25	52.5	105
2-Methylpentane	0.392	0.490	0.980	2.450	4.90	24.50	49.0	98
2,2-Dichloropropane	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
1,1-Dichloropropene	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
Thiophene	0.408	0.510	1.020	2.550	5.10	25.50	51.0	102
2,3-Dimethylpentane	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
Dibromomethane	0.420	0.525	1.050	2.625	5.25	26.25	52.5	105
1,3-Dichloropropane	0.424	0.530	1.060	2.650	5.30	26.50	53.0	106
1,1,1,2-Tetrachloroethane	0.440	0.550	1.100	2.750	5.50	27.50	55.0	110
1-Chlorohexane	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
1,2,3-Trichloropropane	0.424	0.530	1.060	2.650	5.30	26.50	53.0	106
Bromobenzene	0.428	0.535	1.070	2.675	5.35	26.75	53.5	107
2-Chlorotoluene	0.440	0.550	1.100	2.750	5.50	27.50	55.0	110
4-Chlorotoluene	0.428	0.535	1.070	2.675	5.35	26.75	53.5	107
Indane	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
Indene	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
1,2,4,5-Tetramethylbenzene	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
1,2,3,4-Tetramethylbenzene	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
1,2,3,5-Tetramethylbenzene	0.408	0.510	1.020	2.550	5.10	25.50	51.0	102
1,2,3-Trichlorobenzene	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
Chloropentafluoroethane (R115)	0.424	0.530	1.060	2.650	5.30	26.50	53.0	106
2,2-Dichloro-1,1,1-trifluoroethane (R123)	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
1,1-Difluoroethane (R152a)	0.428	0.535	1.070	2.675	5.35	26.75	53.5	107
Chlorodifluoromethane (R22)	0.424	0.530	1.060	2.650	5.30	26.50	53.0	106
Dichlorofluoromethane (R21)	0.412	0.515	1.030	2.575	5.15	25.75	51.5	103
1,1,1,2-Tetrafluoroethane (R134a)	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
1-Chloro-1,1-Difluoroethane	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104
Methyl Acetate	0.372	0.465	0.930	2.325	4.65	23.25	46.5	93
Methylcyclohexane	0.428	0.535	1.070	2.675	5.35	26.75	53.5	107
Chlorotrifluoroethene	0.416	0.520	1.040	2.600	5.20	26.00	52.0	104

CD 11/21/13

11/21/13

Calibration Status Report Instrument #MS08

Method : I:\MS08\Methods\ACF8111913.M (RTE Integrator)
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	0.40	0	13	I:\MS08\Data\2013_11\19\11191319.D
2	1.0	1	13	I:\MS08\Data\2013_11\19\11191320.D
3	2.5	3	13	I:\MS08\Data\2013_11\19\11191321.D
4	5.0	5	13	I:\MS08\Data\2013_11\19\11191322.D
5	25	27	13	I:\MS08\Data\2013_11\19\11191323.D
6	50	53	13	I:\MS08\Data\2013_11\19\11191324.D
7	100	106	13	I:\MS08\Data\2013_11\19\11191325.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.40	Nov 20 13:24 2013	Nov 20 13:21 2013	19 Nov 2013 19:58
2	1.0	Nov 20 13:24 2013	Nov 20 13:21 2013	19 Nov 2013 20:27
3	2.5	Nov 20 13:24 2013	Nov 20 13:21 2013	19 Nov 2013 20:57
4	5.0	Nov 20 13:25 2013	Nov 20 13:21 2013	19 Nov 2013 21:26
5	25	Nov 20 13:25 2013	Nov 20 13:19 2013	19 Nov 2013 21:55
6	50	Nov 20 13:26 2013	Nov 20 13:21 2013	19 Nov 2013 22:25
7	100	Nov 20 13:26 2013	Nov 20 13:21 2013	19 Nov 2013 22:54

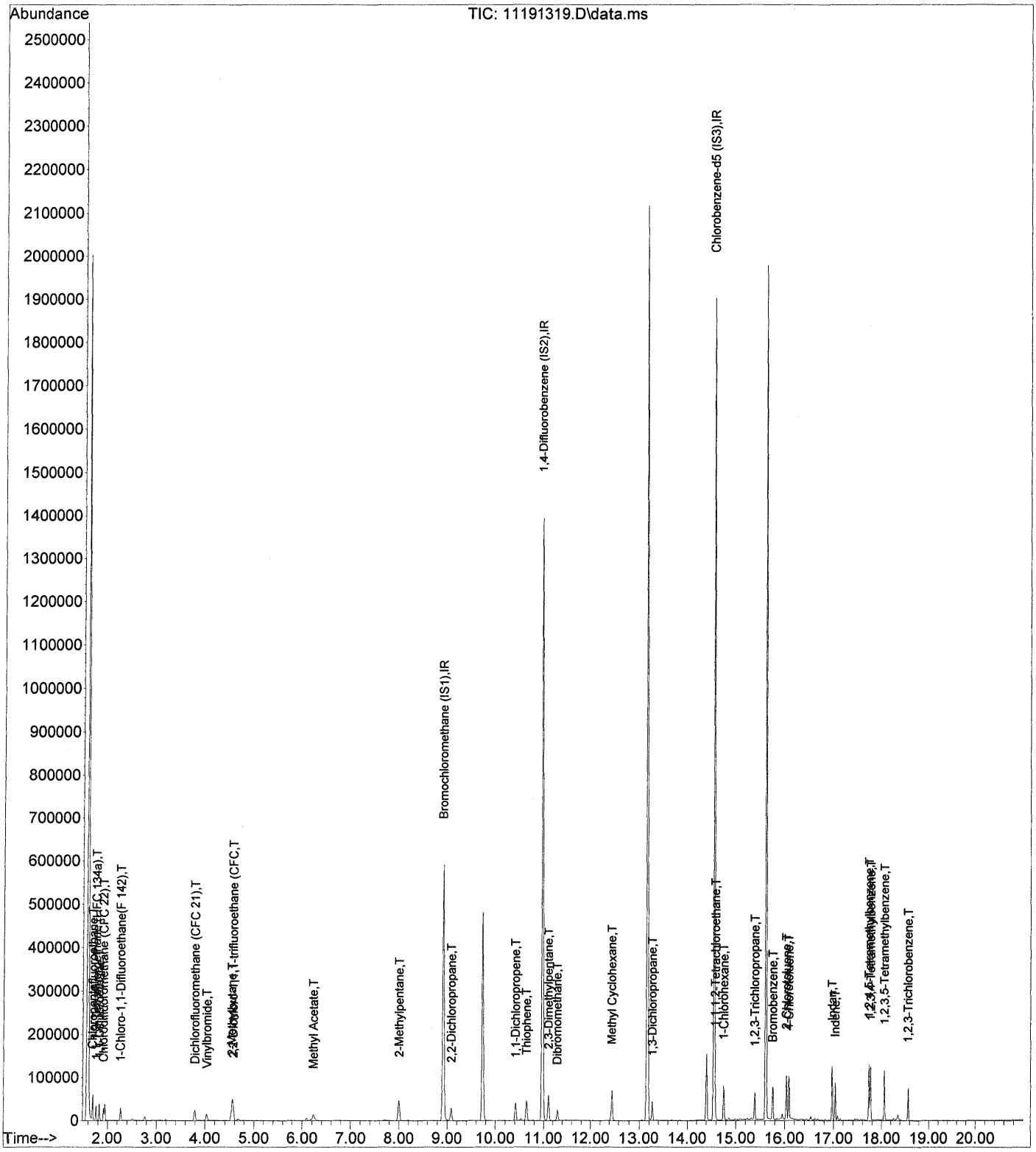
ACF8111913.M Wed Nov 20 13:46:29 2013

CD 11/20/13

DA 11/21/13

Data File: I:\MS08\Data\2013_11\19\11191319.D
Acq On : 19 Nov 2013 19:58 Operator: EM/CD
Sample : 0.4ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:14 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191319.D
Acq On : 19 Nov 2013 19:58 Operator: EM/CD
Sample : 0.4ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:14 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

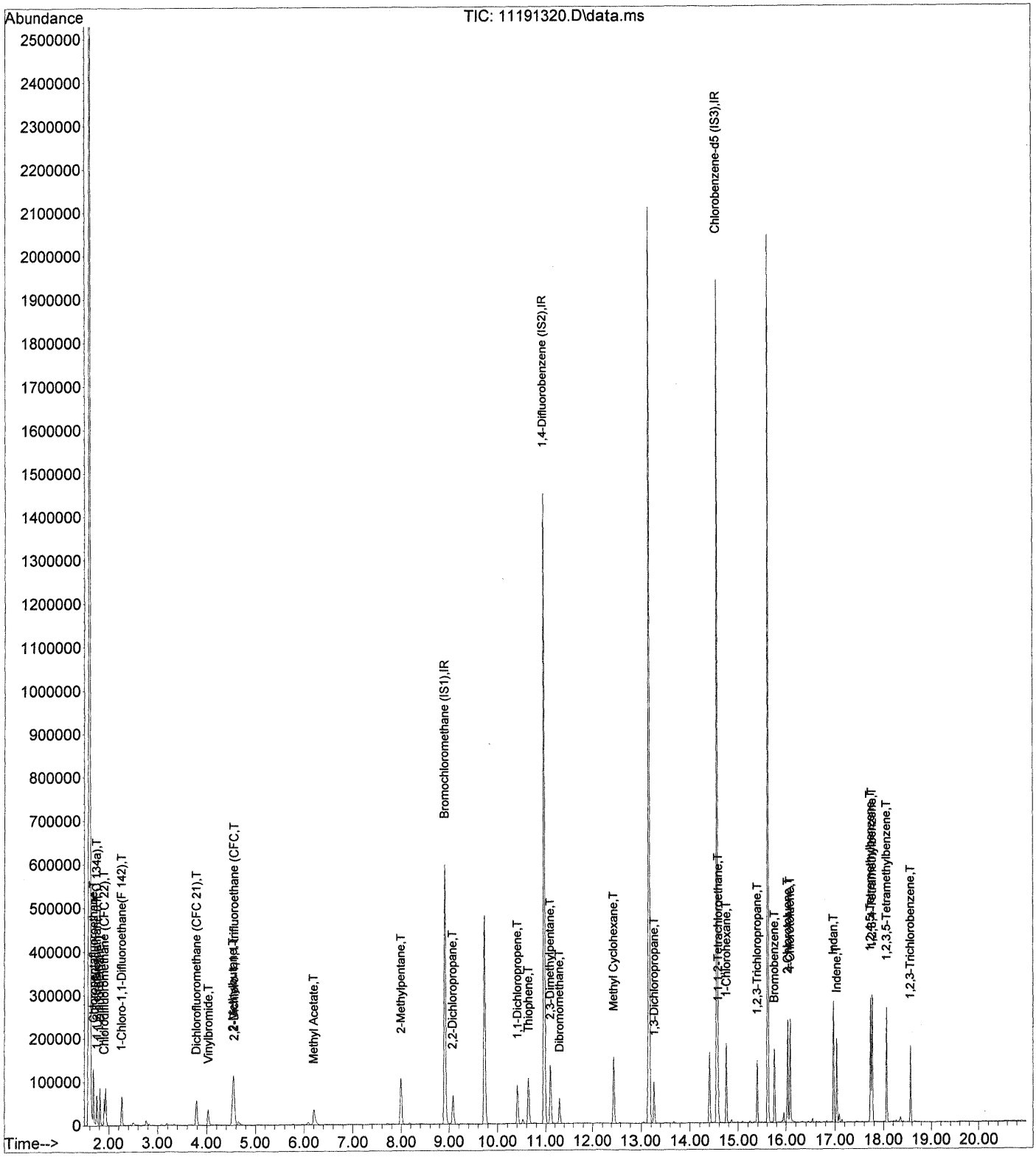
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	251378	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.97	114	1236898	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	485390	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.69	85	15410	0.387	ng	99
3) 1,1,1,2-Tetrafluoroeth...	1.76	83	11116	0.367	ng	98
4) 1,1-Difluoroethane	1.83	65	11337	0.374	ng	97
5) Chlorodifluoromethane ...	1.91	67	3259	0.337	ng	88
6) 1-Chloro-1,1-Difluoroe...	2.27	65	23096	0.347	ng	99
7) Dichlorofluoromethane ...	3.79	67	27725	0.391	ng	99
8) Vinylbromide	4.04	108	11250	0.478	ng	98
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	18785	0.423	ng	100
10) 2-Methylbutane	4.54	57	15353	0.379	ng	97
11) Methyl Acetate	6.23	43	28961	0.301	ng	97
12) 2-Methylpentane	8.00	71	14240	0.387	ng	96
13) 2,2-Dichloropropane	9.08	77	21379	0.392	ng	99
14) 1,1-Dichloropropene	10.41	75	19670	0.402	ng	97
15) Thiophene	10.64	84	30591	0.427	ng	99
17) 2,3-Dimethylpentane	11.11	56	27339	0.388	ng	98
18) Dibromomethane	11.29	174	11536	0.562	ng	98
20) Methyl Cyclohexane	12.45	55	22242	0.509	ng	99
21) 1,3-Dichloropropane	13.26	76	23212	0.534	ng	98
22) 1,1,1,2-Tetrachloroethane	14.58	131	14730	0.649	ng	97
23) 1-Chlorohexane	14.75	91	23535	0.598	ng	100
24) 1,2,3-Trichloropropane	15.39	75	21464	0.524	ng	98
25) Bromobenzene	15.75	77	26707	0.548	ng	96
26) 2-Chlorotoluene	16.03	91	47813	0.575	ng	100
27) 4-Chlorotoluene	16.08	91	48631	0.570	ng	97
28) Indan	16.96	117	54326	0.583	ng	99
29) Indene	17.03	115	36370	0.446	ng	98
30) 1,2,4,5-Tetramethylben...	17.73	119	54229	0.510	ng	98
31) 1,2,3,4-Tetramethylben...	17.77	119	54805	0.529	ng	100
32) 1,2,3,5-Tetramethylben...	18.06	119	51752	0.505	ng	99
33) 1,2,3-Trichlorobenzene	18.57	180	21241	0.547	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

CD 11/20/13 11/21/13

Data File: I:\MS08\Data\2013_11\19\11191320.D
Acq On : 19 Nov 2013 20:27 Operator: EM/CD
Sample : 1.0ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:17 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191320.D
Acq On : 19 Nov 2013 20:27 Operator: EM/CD
Sample : 1.0ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:17 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	252239	12.500 ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.97	114	1253400	12.500 ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	499034	12.500 ng	0.00
Target Compounds					**Qvalue**
2) Chloropentafluoroethane	1.68	85	36134	0.904 ng	98
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	25382	0.836 ng	99
4) 1,1-Difluoroethane	1.82	65	27083	0.892 ng	98
5) Chlorodifluoromethane ...	1.91	67	7805	0.804 ng	95
6) 1-Chloro-1,1-Difluoroe...	2.26	65	51945	0.778 ng	100
7) Dichlorofluoromethane ...	3.79	67	63113	0.888 ng	99
8) Vinylbromide	4.03	108	26304	1.113 ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	42367	0.951 ng	100
10) 2-Methylbutane	4.54	57	34903	0.858 ng	96
11) Methyl Acetate	6.21	43	66640	0.690 ng	98
12) 2-Methylpentane	8.00	71	31981	0.866 ng	95
13) 2,2-Dichloropropane	9.08	77	49825	0.911 ng	99
14) 1,1-Dichloropropene	10.41	75	44554	0.908 ng	99
15) Thiophene	10.64	84	70581	0.982 ng	99
17) 2,3-Dimethylpentane	11.10	56	63016	0.883 ng	98
18) Dibromomethane	11.30	174	26452	1.273 ng	100
20) Methyl Cyclohexane	12.45	55	51045	1.136 ng	98
21) 1,3-Dichloropropane	13.26	76	53374	1.194 ng	100
22) 1,1,1,2-Tetrachloroethane	14.58	131	31955	1.370 ng	98
23) 1-Chlorohexane	14.75	91	51573	1.274 ng	99
24) 1,2,3-Trichloropropane	15.39	75	48031	1.141 ng	99
25) Bromobenzene	15.75	77	59950	1.197 ng	98
26) 2-Chlorotoluene	16.03	91	112403	1.315 ng	98
27) 4-Chlorotoluene	16.08	91	109926	1.254 ng	98
28) Indan	16.96	117	124194	1.296 ng	100
29) Indene	17.03	115	83883	1.000 ng	100
30) 1,2,4,5-Tetramethylben...	17.73	119	124746	1.142 ng	99
31) 1,2,3,4-Tetramethylben...	17.76	119	127655	1.199 ng	99
32) 1,2,3,5-Tetramethylben...	18.06	119	120520	1.143 ng	97
33) 1,2,3-Trichlorobenzene	18.57	180	49068	1.228 ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

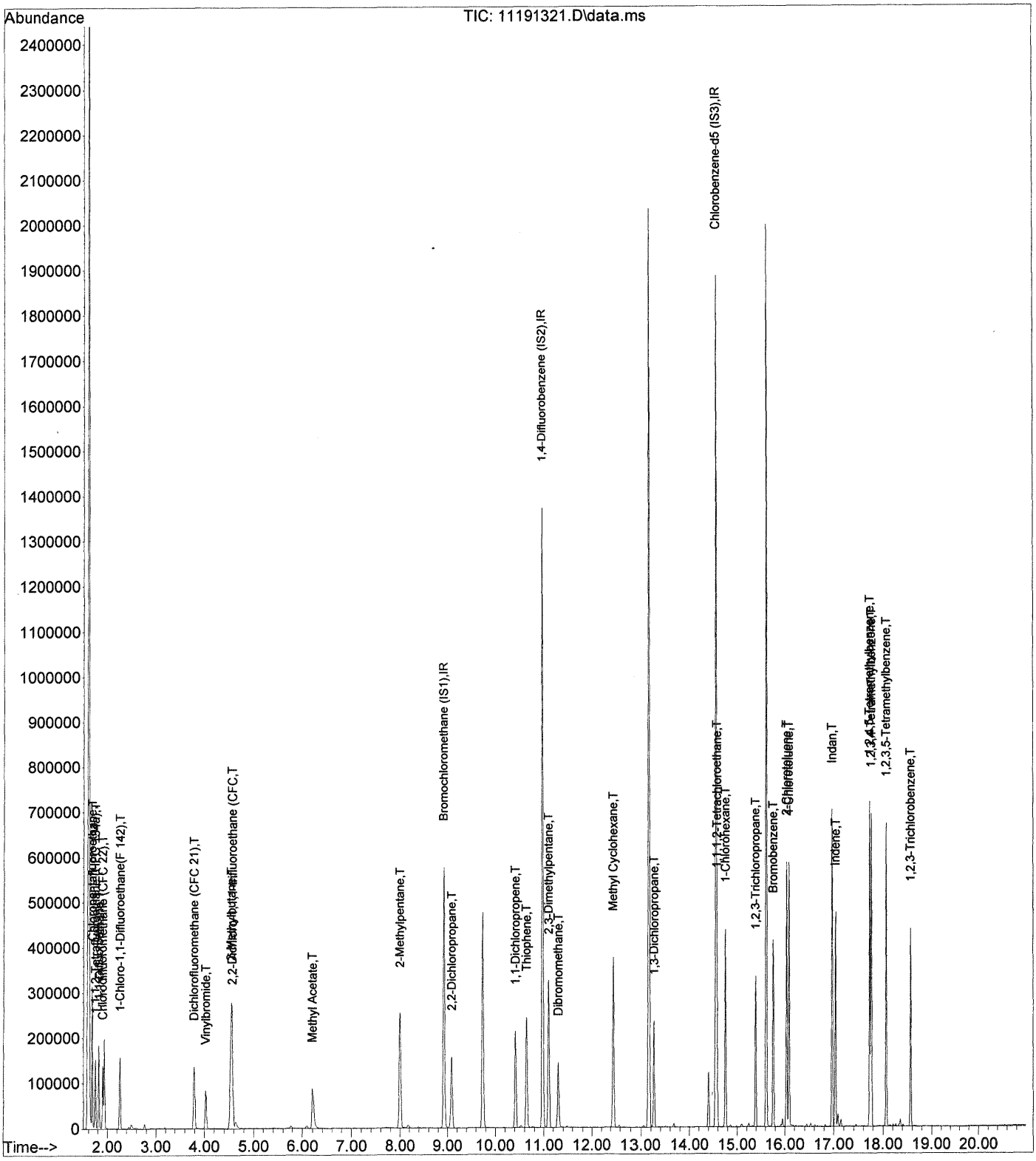
CD 11/20/13

DA 11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191321.D
Acq On : 19 Nov 2013 20:57 Operator: EM/CD
Sample : 2.5ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:19 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191321.D
Acq On : 19 Nov 2013 20:57 Operator: EM/CD
Sample : 2.5ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:19 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	245875	12.500 ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.97	114	1211406	12.500 ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	481439	12.500 ng	0.00
Target Compounds					**Qvalue**
2) Chloropentafluoroethane	1.68	85	83646	2.147 ng	99
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	59490	2.010 ng	97
4) 1,1-Difluoroethane	1.82	65	64714	2.185 ng	100
5) Chlorodifluoromethane ...	1.90	67	19182	2.028 ng	98
6) 1-Chloro-1,1-Difluoroe...	2.26	65	126304	1.941 ng	99
7) Dichlorofluoromethane ...	3.78	67	151187	2.182 ng	99
8) Vinylbromide	4.03	108	64863	2.816 ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	101946	2.348 ng	100
10) 2-Methylbutane	4.54	57	85596	2.159 ng	98
11) Methyl Acetate	6.19	43	162177	1.724 ng	99
12) 2-Methylpentane	8.00	71	78452	2.178 ng	98
13) 2,2-Dichloropropane	9.08	77	118722	2.226 ng	99
14) 1,1-Dichloropropene	10.41	75	109335	2.285 ng	99
15) Thiophene	10.64	84	169979	2.427 ng	99
17) 2,3-Dimethylpentane	11.11	56	153016	2.218 ng	99
18) Dibromomethane	11.30	174	63625	3.167 ng	99
20) Methyl Cyclohexane	12.45	55	122561	2.827 ng	99
21) 1,3-Dichloropropane	13.26	76	129451	3.002 ng	99
22) 1,1,1,2-Tetrachloroethane	14.58	131	79697	3.541 ng	100
23) 1-Chlorohexane	14.75	91	125202	3.207 ng	99
24) 1,2,3-Trichloropropane	15.39	75	116868	2.879 ng	100
25) Bromobenzene	15.75	77	144219	2.985 ng	98
26) 2-Chlorotoluene	16.03	91	269777	3.271 ng	99
27) 4-Chlorotoluene	16.08	91	267625	3.165 ng	98
28) Indan	16.96	117	303375	3.281 ng	99
29) Indene	17.03	115	206299	2.548 ng	99
30) 1,2,4,5-Tetramethylben...	17.73	119	307756	2.920 ng	99
31) 1,2,3,4-Tetramethylben...	17.76	119	309722	3.016 ng	99
32) 1,2,3,5-Tetramethylben...	18.06	119	296076	2.910 ng	98
33) 1,2,3-Trichlorobenzene	18.57	180	121164	3.144 ng	99

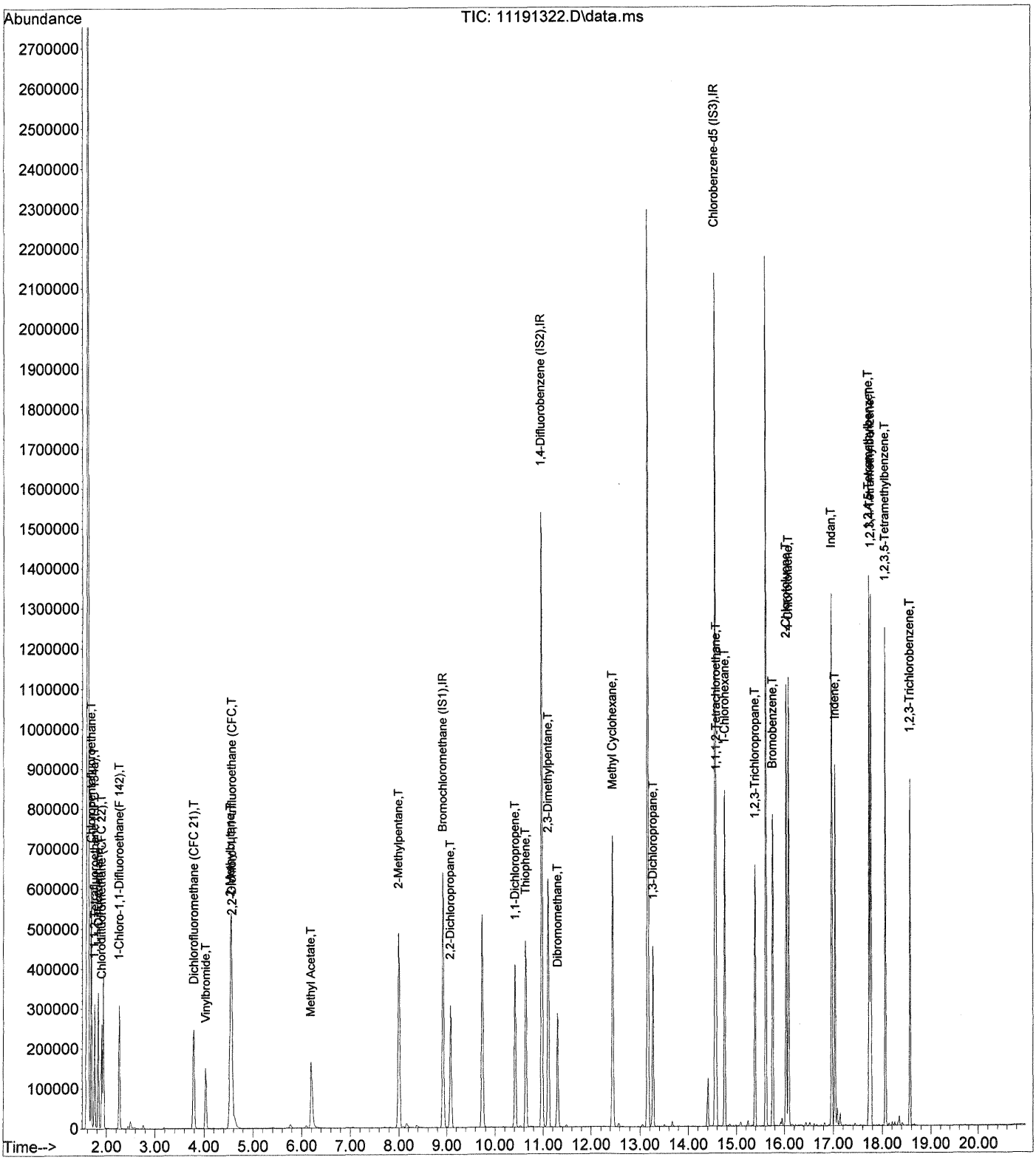
(#) = qualifier out of range (m) = manual integration (+) = signals summed

CD 11/20/13 11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191322.D
Acq On : 19 Nov 2013 21:26 Operator: EM/CD
Sample : 5.0ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:22 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191322.D
Acq On : 19 Nov 2013 21:26 Operator: EM/CD
Sample : 5.0ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-10221306 (11/20)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 20 13:21:22 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	268636	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.97	114	1333662	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	537662	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.68	85	162705	3.822	ng	99
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	119376	3.691	ng	100
4) 1,1-Difluoroethane	1.83	65	126074	3.897	ng	99
5) Chlorodifluoromethane ...	1.90	67	37377	3.617	ng	99
6) 1-Chloro-1,1-Difluoroe...	2.26	65	245948	3.459	ng	99
7) Dichlorofluoromethane ...	3.79	67	277867	3.670	ng	100
8) Vinylbromide	4.03	108	119150	4.734	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	193345	4.075	ng	100
10) 2-Methylbutane	4.54	57	160750	3.712	ng	97
11) Methyl Acetate	6.18	43	314164	3.057	ng	100
12) 2-Methylpentane	7.99	71	150784	3.832	ng	98
13) 2,2-Dichloropropane	9.08	77	229655	3.941	ng	100
14) 1,1-Dichloropropene	10.42	75	210296	4.022	ng	99
15) Thiophene	10.64	84	326313	4.264	ng	100
17) 2,3-Dimethylpentane	11.11	56	290845	3.829	ng	99
18) Dibromomethane	11.30	174	123930	5.604	ng	99
20) Methyl Cyclohexane	12.45	55	235718	4.869	ng	99
21) 1,3-Dichloropropane	13.26	76	249617	5.183	ng	99
22) 1,1,1,2-Tetrachloroethane	14.58	131	157088	6.249	ng	99
23) 1-Chlorohexane	14.75	91	240226	5.509	ng	100
24) 1,2,3-Trichloropropane	15.39	75	225937	4.984	ng	99
25) Bromobenzene	15.75	77	277036	5.135	ng	99
26) 2-Chlorotoluene	16.03	91	517408	5.617	ng	99
27) 4-Chlorotoluene	16.08	91	518068	5.486	ng	99
28) Indan	16.96	117	586279	5.677	ng	100
29) Indene	17.03	115	398996	4.413	ng	100
30) 1,2,4,5-Tetramethylben...	17.73	119	592392	5.033	ng	99
31) 1,2,3,4-Tetramethylben...	17.76	119	597145	5.207	ng	99
32) 1,2,3,5-Tetramethylben...	18.06	119	562252	4.949	ng	98
33) 1,2,3-Trichlorobenzene	18.57	180	235044	5.461	ng	99

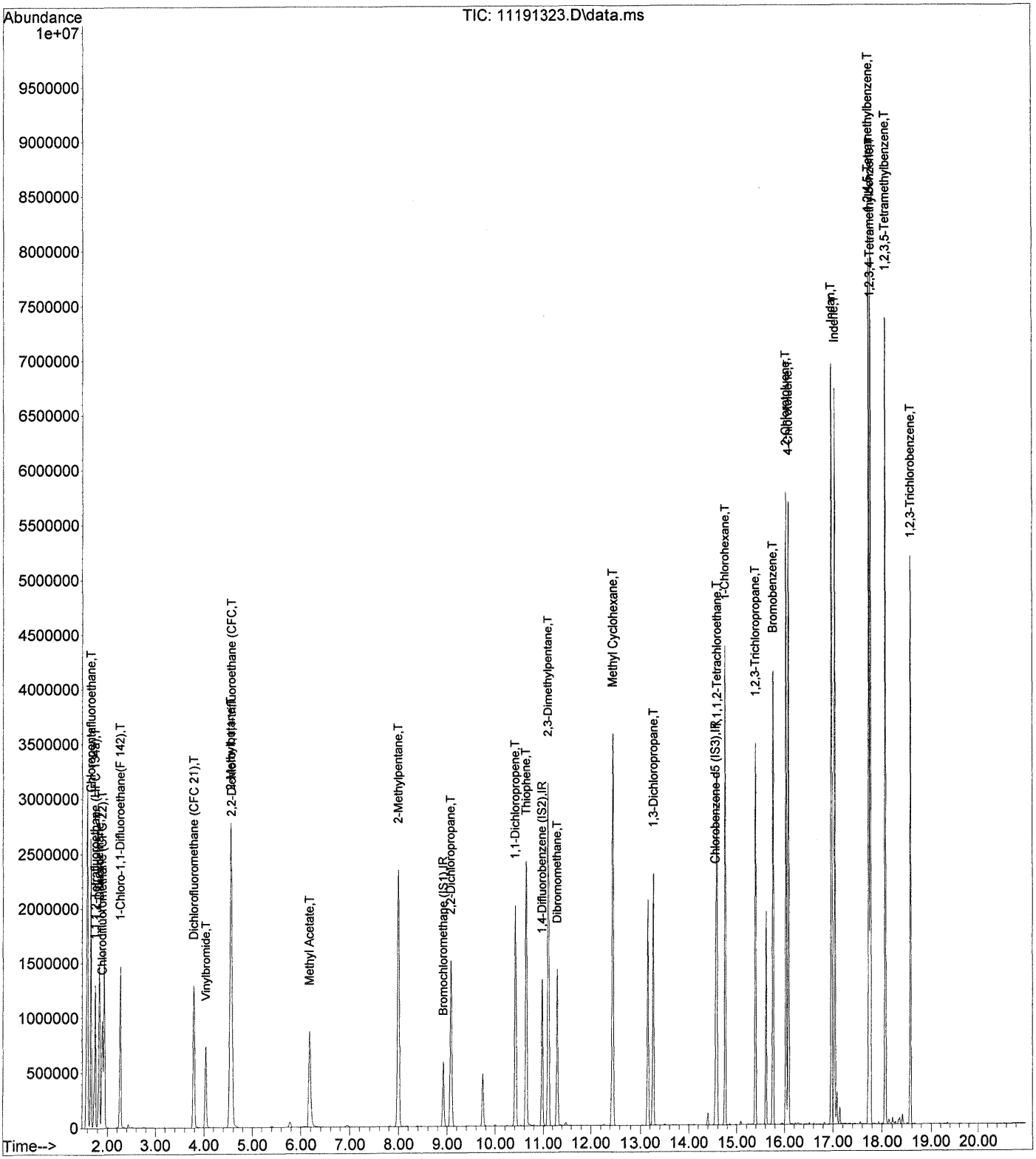
(#) = qualifier out of range (m) = manual integration (+) = signals summed

CD 11/20/13 11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191323.D
Acq On : 19 Nov 2013 21:55 Operator: EM/CD
Sample : 25ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:19:17 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:19:05 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2013_11\19\11191323.D
Acq On : 19 Nov 2013 21:55 Operator: EM/CD
Sample : 25ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:19:17 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:19:05 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	249314	12.500	ng		-0.03
16) 1,4-Difluorobenzene (IS2)	10.98	114	1193330	12.500	ng		-0.02
19) Chlorobenzene-d5 (IS3)	14.55	82	509218	12.500	ng		-0.02
Target Compounds							**Qvalue**
2) Chloropentafluoroethane	1.66	85	847473	21.449	ng		94
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	615822	20.519	ng		99
4) 1,1-Difluoroethane	1.83	65	644391	21.462	ng		87
5) Chlorodifluoromethane ...	1.89	67	192906	20.114	ng		98
6) 1-Chloro-1,1-Difluoroe...	2.26	65	1248180	18.914	ng		95
7) Dichlorofluoromethane ...	3.78	67	1504989	21.421	ng		99
8) Vinylbromide	4.04	108	651640	27.899	ng		99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	1006914	22.869	ng		99
10) 2-Methylbutane	4.54	57	831130	20.679	ng		88
11) Methyl Acetate	6.17	43	1669031	17.497	ng	#	93
12) 2-Methylpentane	8.00	71	739136	20.239	ng		77
13) 2,2-Dichloropropane	9.08	77	1172511	21.679	ng		98
14) 1,1-Dichloropropene	10.42	75	1048505	21.609	ng	#	83
15) Thiophene	10.64	84	1675958	23.597	ng	#	87
17) 2,3-Dimethylpentane	11.11	56	1478422	21.751	ng		92
18) Dibromomethane	11.30	174	655844	33.144	ng	#	80
20) Methyl Cyclohexane	12.45	55	1200841	26.188	ng	#	83
21) 1,3-Dichloropropane	13.26	76	1297376	28.442	ng		90
22) 1,1,1,2-Tetrachloroethane	14.58	131	824491	34.630	ng		99
23) 1-Chlorohexane	14.75	91	1232533	29.845	ng		84
24) 1,2,3-Trichloropropane	15.39	75	1205520	28.076	ng		94
25) Bromobenzene	15.75	77	1470153	28.770	ng	#	77
26) 2-Chlorotoluene	16.03	91	2729451	31.289	ng		92
27) 4-Chlorotoluene	16.09	91	2729064	30.516	ng		92
28) Indan	16.97	117	3236240	33.086	ng		98
29) Indene	17.03	115	2803199	32.739	ng		98
30) 1,2,4,5-Tetramethylben...	17.73	119	3671291	32.933	ng		96
31) 1,2,3,4-Tetramethylben...	17.77	119	3478590	32.026	ng		93
32) 1,2,3,5-Tetramethylben...	18.07	119	3452634	32.088	ng		95
33) 1,2,3-Trichlorobenzene	18.57	180	1478988	36.282	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

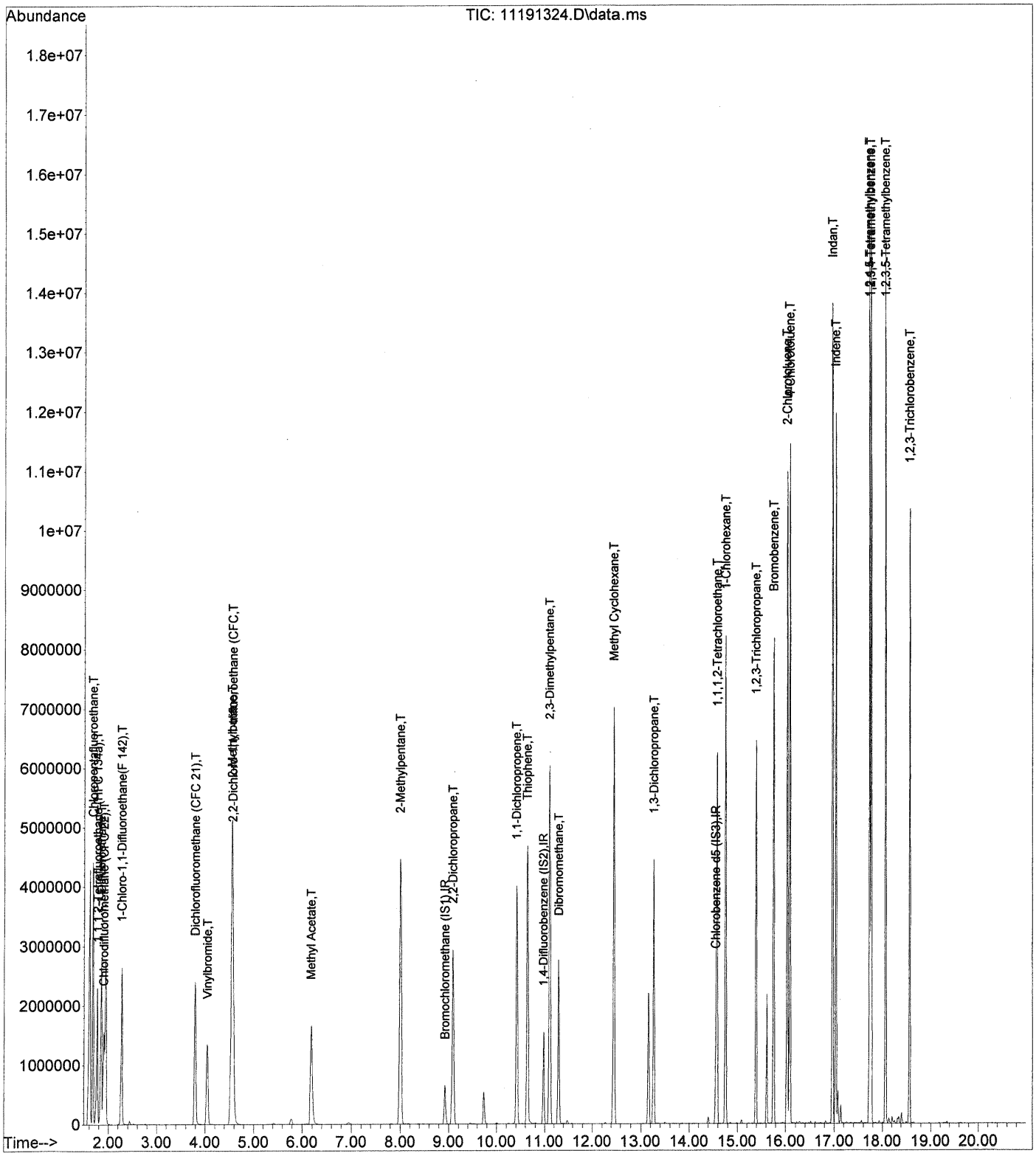
CD 11/20/13

11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191324.D
Acq On : 19 Nov 2013 22:25 Operator: EM/CD
Sample : 50ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:21:25 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2013_11\19\11191324.D
Acq On : 19 Nov 2013 22:25 Operator: EM/CD
Sample : 50ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:21:25 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	280844	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.98	114	1332374	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	587306	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.67	85	1650248	37.078	ng	100
3) 1,1,1,2-Tetrafluoroeth...	1.77	83	1191891	35.254	ng	100
4) 1,1-Difluoroethane	1.85	65	1230547	36.383	ng	99
5) Chlorodifluoromethane ...	1.90	67	370387	34.283	ng	100
6) 1-Chloro-1,1-Difluoroe...	2.27	65	2367523	31.848	ng	100
7) Dichlorofluoromethane ...	3.80	67	2913727	36.816	ng	100
8) Vinylbromide	4.05	108	1269330	48.244	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	1968356	39.686	ng	100
10) 2-Methylbutane	4.55	57	1608446	35.526	ng	100
11) Methyl Acetate	6.18	43	3219890	29.965	ng	100
12) 2-Methylpentane	8.00	71	1440554	35.017	ng	99
13) 2,2-Dichloropropane	9.08	77	2264661	37.171	ng	100
14) 1,1-Dichloropropene	10.42	75	2063483	37.753	ng	100
15) Thiophene	10.64	84	3260835	40.758	ng	100
17) 2,3-Dimethylpentane	11.11	56	2837356	37.388	ng	100
18) Dibromomethane	11.31	174	1283278	58.085	ng	99
20) Methyl Cyclohexane	12.46	55	2309674	43.672	ng	100
21) 1,3-Dichloropropane	13.26	76	2497210	47.466	ng	99
22) 1,1,1,2-Tetrachloroethane	14.58	131	1602838	58.371	ng	100
23) 1-Chlorohexane	14.75	91	2383856	50.049	ng	99
24) 1,2,3-Trichloropropane	15.39	75	2304551	46.537	ng	99
25) Bromobenzene	15.76	77	2803879	47.575	ng	98
26) 2-Chlorotoluene	16.03	91	5191552	51.600	ng	98
27) 4-Chlorotoluene	16.09	91	5204197	50.455	ng	98
28) Indan	16.97	117	6122608	54.272	ng	99
29) Indene	17.03	115	5359732	54.274	ng	100
30) 1,2,4,5-Tetramethylben...	17.73	119	6827984	53.106	ng	99
31) 1,2,3,4-Tetramethylben...	17.77	119	6690861	53.410	ng	98
32) 1,2,3,5-Tetramethylben...	18.07	119	6542052	52.716	ng	98
33) 1,2,3-Trichlorobenzene	18.57	180	2898558	61.652	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

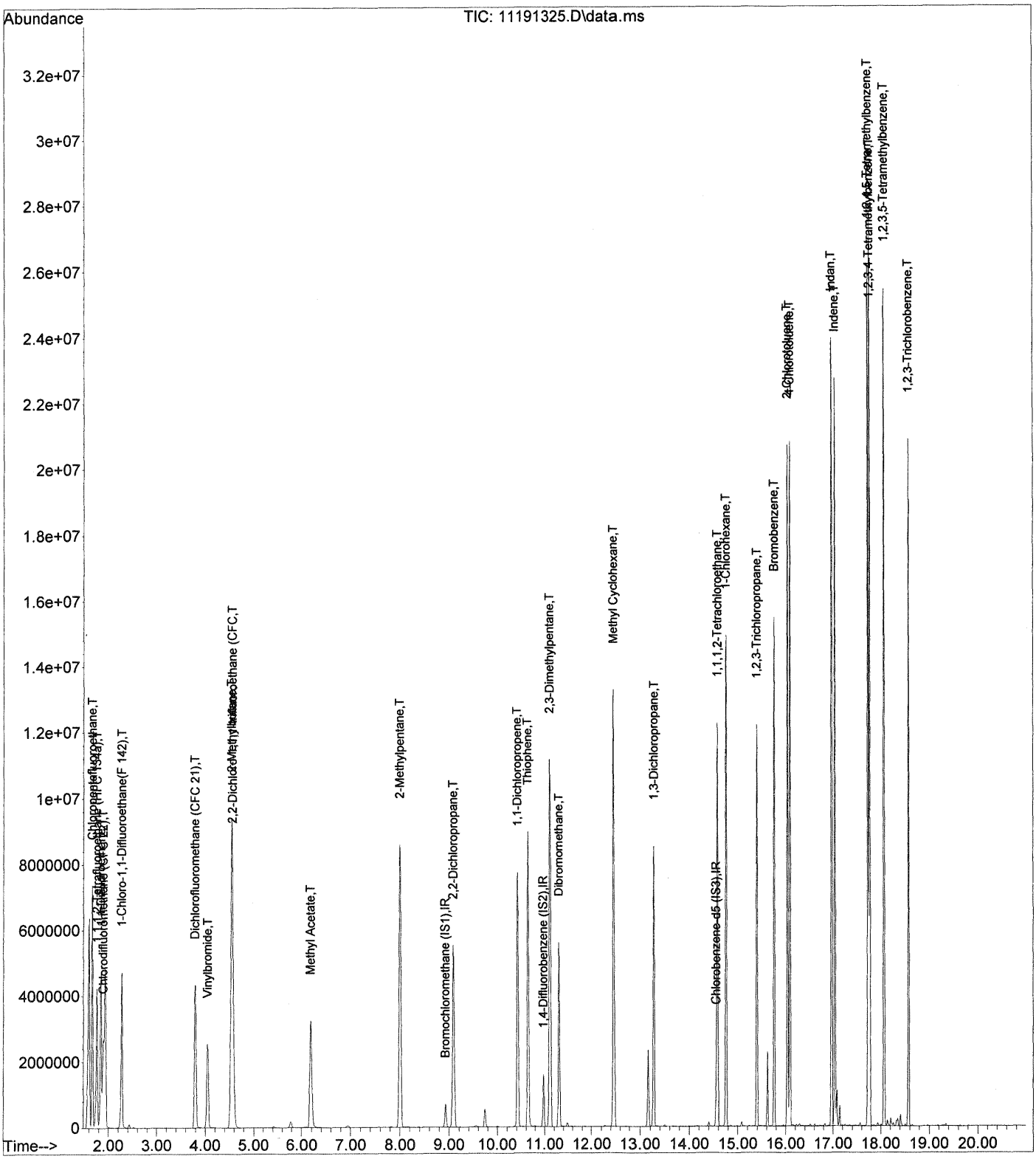
CD 11/20/13

11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191325.D
Acq On : 19 Nov 2013 22:54 Operator: EM/CD
Sample : 100ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:21:28 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191325.D
Acq On : 19 Nov 2013 22:54 Operator: EM/CD
Sample : 100ng TO-15 Custom ICAL Std
Misc : S25-11181301/S25-11141305 (12/13)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 20 13:21:28 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:20:08 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	300400	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.98	114	1393513	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	665031	12.500	ng	0.00

Target Compounds						Qvalue
2) Chloropentafluoroethane	1.66	85	3203878	67.300	ng	99
3) 1,1,1,2-Tetrafluoroeth...	1.76	83	2313102	63.964	ng	99
4) 1,1-Difluoroethane	1.85	65	2296928	63.491	ng	94
5) Chlorodifluoromethane ...	1.90	67	721668	62.449	ng	88
6) 1-Chloro-1,1-Difluoroe...	2.27	65	4545929	57.172	ng	99
7) Dichlorofluoromethane ...	3.79	67	5644219	66.674	ng	99
8) Vinylbromide	4.05	108	2464642	87.576	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.57	83	3807976	71.778	ng	100
10) 2-Methylbutane	4.55	57	3090197	63.810	ng	98
11) Methyl Acetate	6.18	43	6296408	54.781	ng	99
12) 2-Methylpentane	8.00	71	2835162	64.432	ng	96
13) 2,2-Dichloropropane	9.08	77	4405083	67.596	ng	99
14) 1,1-Dichloropropene	10.42	75	4038761	69.082	ng	98
15) Thiophene	10.65	84	6357453	74.290	ng	100
17) 2,3-Dimethylpentane	11.12	56	5484349	69.098	ng	99
18) Dibromomethane	11.31	174	2555089	110.577	ng	99
20) Methyl Cyclohexane	12.46	55	4446061	74.242	ng	98
21) 1,3-Dichloropropane	13.27	76	4840221	81.249	ng	98
22) 1,1,1,2-Tetrachloroethane	14.58	131	3155801	101.495	ng	100
23) 1-Chlorohexane	14.76	91	4608989	85.457	ng	98
24) 1,2,3-Trichloropropane	15.39	75	4452198	79.397	ng	98
25) Bromobenzene	15.76	77	5369646	80.462	ng	95
26) 2-Chlorotoluene	16.04	91	9660195	84.793	ng	94
27) 4-Chlorotoluene	16.09	91	9696122	83.017	ng	95
28) Indan	16.97	117	11171109	87.450	ng	95
29) Indene	17.04	115	10085199	90.190	ng	99
30) 1,2,4,5-Tetramethylben...	17.74	119	12576723	86.385	ng	93
31) 1,2,3,4-Tetramethylben...	17.77	119	11373127	80.176	ng	89
32) 1,2,3,5-Tetramethylben...	18.07	119	11809883	84.043	ng	93
33) 1,2,3-Trichlorobenzene	18.57	180	5694755	106.971	ng	100

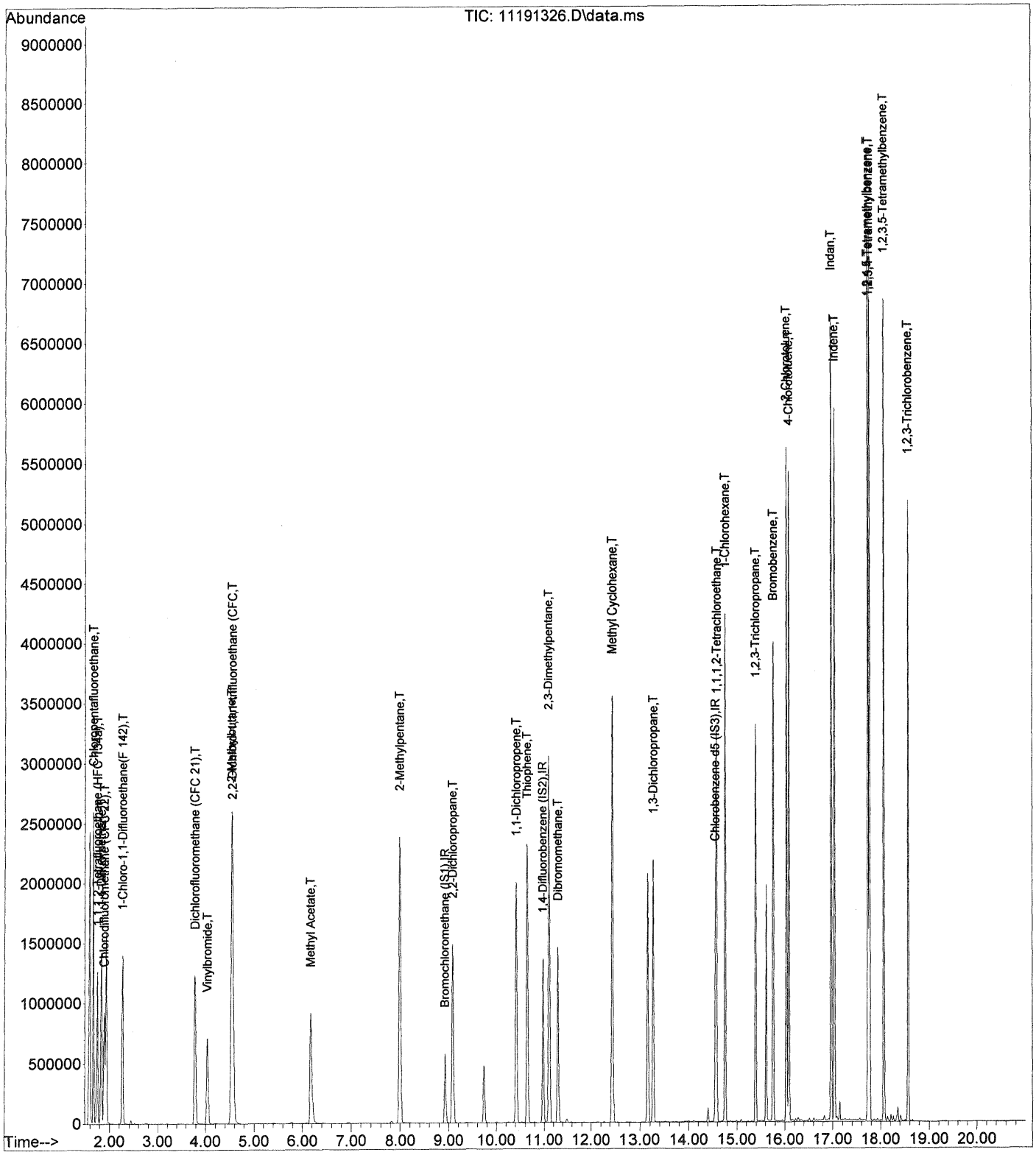
(#) = qualifier out of range (m) = manual integration (+) = signals summed

CD 11/20/13 11/21/13

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191326.D
Acq On : 19 Nov 2013 23:24 Operator: EM/CD
Sample : 25ng TO-15 Custom ICV Std (125mL)
Misc : S25-11181301/S25-11141301 (12/13)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 20 13:31:31 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2013_11\19\11191326.D
Acq On : 19 Nov 2013 23:24 Operator: EM/CD
Sample : 25ng TO-15 Custom ICV Std (125mL)
Misc : S25-11181301/S25-11141301 (12/13)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 20 13:31:31 2013
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	244293	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.98	114	1215878	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	507190	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.66	85	815053	27.089	ng	100
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	588776	26.685	ng	100
4) 1,1-Difluoroethane	1.83	65	612594	27.350	ng	100
5) Chlorodifluoromethane ...	1.89	67	184084	27.443	ng	99
6) 1-Chloro-1,1-Difluoroe...	2.26	65	1187791	26.329	ng	100
7) Dichlorofluoromethane ...	3.78	67	1435514	26.224	ng	100
8) Vinylbromide	4.04	108	636260	26.788	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	993705	27.091	ng	99
10) 2-Methylbutane	4.54	57	778151	25.992	ng	99
11) Methyl Acetate	6.17	43	1781507	27.026	ng	100
12) 2-Methylpentane	8.00	71	751513	25.615	ng	99
13) 2,2-Dichloropropane	9.08	77	1137752	26.691	ng	100
14) 1,1-Dichloropropene	10.42	75	1047451	26.735	ng	100
15) Thiophene	10.64	84	1635717	26.322	ng	100
17) 2,3-Dimethylpentane	11.11	56	1435425	25.951	ng	100
18) Dibromomethane	11.30	174	661398	27.843	ng	100
20) Methyl Cyclohexane	12.45	55	1176722	26.892	ng	100
21) 1,3-Dichloropropane	13.26	76	1259918	26.844	ng	100
22) 1,1,1,2-Tetrachloroethane	14.58	131	820966	28.894	ng	100
23) 1-Chlorohexane	14.75	91	1198718	25.864	ng	99
24) 1,2,3-Trichloropropane	15.39	75	1160694	27.036	ng	100
25) Bromobenzene	15.75	77	1412089	27.002	ng	99
26) 2-Chlorotoluene	16.03	91	2569315	27.381	ng	100
27) 4-Chlorotoluene	16.09	91	2582352	26.795	ng	100
28) Indan	16.97	117	3090231	26.959	ng	100
29) Indene	17.03	115	2601193	30.073	ng	100
30) 1,2,4,5-Tetramethylben...	17.73	119	3402437	28.197	ng	100
31) 1,2,3,4-Tetramethylben...	17.77	119	3175961	26.720	ng	100
32) 1,2,3,5-Tetramethylben...	18.07	119	3162533	27.234	ng	100
33) 1,2,3-Trichlorobenzene	18.57	180	1395480	28.765	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

CD 11/20/13

11/21/13

LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **11191326.D**
Data File Path: **I:\MS08\Data\2013_11\19**
Operator: **EM/CD**
Date Acquired: **11/19/2013** **23:24**

Acq. Method File: **TO15.M**
Sample Name: **25ng TO-15 Custom I**
Misc Info: **S25-11181301/S25-11**
Instrument Name: **Instrument #MS08**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	AZ Check 70-130%
2)	**Chloropentafluoroethane**	1.66	27.1	27.25	99	70	130	*
3)	**1,1,1,2-Tetrafluoroethane (HFC 1**	1.75	26.7	25.75	104	70	130	*
4)	**1,1-Difluoroethane**	1.83	27.3	26.25	104	70	130	*
5)	**Chlorodifluoromethane (CFC 22)**	1.89	27.4	26.50	103	70	130	*
6)	**1-Chloro-1,1-Difluoroethane(F 14**	2.26	26.3	25.50	103	70	130	*
7)	**Dichlorofluoromethane (CFC 21)**	3.78	26.2	25.00	105	70	130	*
8)	**Vinylbromide**	4.04	26.8	25.25	106	70	130	*
9)	**2,2-Dichloro-1,1,1-trifluoroethane**	4.56	27.1	26.25	103	70	130	*
10)	**2-Methylbutane**	4.54	26.0	25.00	104	70	130	*
11)	**Methyl Acetate**	6.17	27.0	26.25	103	70	130	*
12)	**2-Methylpentane**	8.00	25.6	24.75	103	70	130	*
13)	**2,2-Dichloropropane**	9.08	26.7	25.50	105	70	130	*
14)	**1,1-Dichloropropene**	10.42	26.7	25.75	104	70	130	*
15)	**Thiophene**	10.64	26.3	25.25	104	70	130	*
17)	**2,3-Dimethylpentane**	11.11	26.0	25.75	101	70	130	*
18)	**Dibromomethane**	11.30	27.8	27.00	103	70	130	*
20)	**Methyl Cyclohexane**	12.45	26.9	26.75	101	70	130	*
21)	**1,3-Dichloropropane**	13.26	26.8	26.25	102	70	130	*
22)	**1,1,1,2-Tetrachloroethane**	14.58	28.9	27.25	106	70	130	*
23)	**1-Chlorohexane**	14.75	25.9	25.50	102	70	130	*
24)	**1,2,3-Trichloropropane**	15.39	27.0	26.25	103	70	130	*
25)	**Bromobenzene**	15.75	27.0	26.50	102	70	130	*
26)	**2-Chlorotoluene**	16.03	27.4	27.25	101	70	130	*
27)	**4-Chlorotoluene**	16.09	26.8	26.25	102	70	130	*
28)	**Indan**	16.97	27.0	25.75	105	70	130	*
29)	**Indene**	17.03	30.1	25.00	120	70	130	*
30)	**1,2,4,5-Tetramethylbenzene**	17.73	28.2	25.00	113	70	130	*
31)	**1,2,3,4-Tetramethylbenzene**	17.77	26.7	24.75	108	70	130	*
32)	**1,2,3,5-Tetramethylbenzene**	18.07	27.2	24.75	110	70	130	*
33)	**1,2,3-Trichlorobenzene**	18.57	28.8	25.00	115	70	130	*

* = Pass

CD 11/20/13

JDA 11/21/13

Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	67	0.02
2	T	Propene	1.763	1.450	17.8	59	-0.03
3	T	Dichlorodifluoromethane (CF	2.982	2.842	4.7	69	-0.02
4	T	Chloromethane	2.454	2.031	17.2	59	-0.01
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.810	1.538	15.0	63	-0.02
6	T	Vinyl Chloride	2.444	2.041	16.5	60	0.00
7	T	1,3-Butadiene	1.914	1.737	9.2	64	0.00
8	T	Bromomethane	1.509	1.255	16.8	60	0.00
9	T	Chloroethane	1.362	1.102	19.1	58	0.00
10	T	Ethanol	1.214	1.082	10.9	60	0.07
11	T	Acetonitrile	3.338	2.648	20.7	57	0.02
12	T	Acrolein	1.020	0.819	19.7	57	0.00
13	T	Acetone	1.216	1.084	10.9	63	0.00
14	T	Trichlorofluoromethane	2.761	2.496	9.6	68	0.00
15	T	2-Propanol (Isopropanol)	4.422	3.880	12.3	62	0.00
16	T	Acrylonitrile	2.089	1.839	12.0	60	0.02
17	T	1,1-Dichloroethene	1.568	1.333	15.0	61	0.00
18	T	2-Methyl-2-Propanol (tert-B	4.334	3.955	8.7	63	-0.05
19	T	Methylene Chloride	1.644	1.459	11.3	63	0.03
20	T	3-Chloro-1-propene (Allyl C	2.725	2.090	23.3	58	0.02
21	T	Trichlorotrifluoroethane	1.454	1.218	16.2	61	0.00
22	T	Carbon Disulfide	5.805	5.167	11.0	61	0.01
23	T	trans-1,2-Dichloroethene	2.238	2.020	9.7	63	0.02
24	T	1,1-Dichloroethane	2.835	2.461	13.2	64	0.01
25	T	Methyl tert-Butyl Ether	4.803	4.390	8.6	67	-0.05
26	T	Vinyl Acetate	0.454	0.454	0.0	69	0.01
27	T	2-Butanone (MEK)	1.151	0.981	14.8	63	-0.05
28	T	cis-1,2-Dichloroethene	2.098	1.928	8.1	66	0.01
29	T	Diisopropyl Ether	1.472	1.446	1.8	67	-0.03
30	T	Ethyl Acetate	0.576	0.518	10.1	65	-0.03
31	T	n-Hexane	2.326	2.072	10.9	68	0.00
32	T	Chloroform	2.651	2.507	5.4	70	0.01
33	S	1,2-Dichloroethane-d4(SS1)	1.359	1.553	-14.3	78	0.00
34	T	Tetrahydrofuran (THF)	1.044	0.951	8.9	62	-0.07
35	T	Ethyl tert-Butyl Ether	2.087	1.895	9.2	66	-0.03
36	T	1,2-Dichloroethane	1.942	1.952	-0.5	73	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	69	0.00
38	T	1,1,1-Trichloroethane	0.481	0.458	4.8	71	0.00
39	T	Isopropyl Acetate	0.202	0.181	10.4	65	-0.02
40	T	1-Butanol	0.336	0.331	1.5	58	-0.02
41	T	Benzene	1.186	1.057	10.9	65	0.00
42	T	Carbon Tetrachloride	0.410	0.409	0.2	70	0.00
43	T	Cyclohexane	0.537	0.494	8.0	68	0.00
44	T	tert-Amyl Methyl Ether	0.994	0.916	7.8	66	-0.03
45	T	1,2-Dichloropropane	0.327	0.283	13.5	64	0.00
46	T	Bromodichloromethane	0.409	0.400	2.2	69	0.00
47	T	Trichloroethene	0.387	0.340	12.1	65	0.00
48	T	1,4-Dioxane	0.271	0.256	5.5	64	-0.04
49	T	2,2,4-Trimethylpentane (Iso	1.542	1.325	14.1	64	0.00
50	T	Methyl Methacrylate	0.156	0.140	10.3	64	-0.02

Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	T	n-Heptane	0.347	0.299	13.8	67	0.00
52	T	cis-1,3-Dichloropropene	0.503	0.474	5.8	65	0.00
53	T	4-Methyl-2-pentanone	0.330	0.285	13.6	62	-0.03
54	T	trans-1,3-Dichloropropene	0.452	0.446	1.3	66	-0.01
55	T	1,1,2-Trichloroethane	0.312	0.286	8.3	65	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	80	0.00
57	S	Toluene-d8 (SS2)	2.663	2.448	8.1	73	0.00
58	T	Toluene	3.470	2.726	21.4	67	0.00
59	T	2-Hexanone	1.926	1.587	17.6	64	-0.02
60	T	Dibromochloromethane	0.891	0.759	14.8	66	0.00
61	T	1,2-Dibromoethane	0.895	0.734	18.0	66	0.00
62	T	n-Butyl Acetate	2.146	1.751	18.4	62	0.00
63	T	n-Octane	0.767	0.609	20.6	66	0.00
64	T	Tetrachloroethene	1.128	0.888	21.3	65	0.00
65	T	Chlorobenzene	2.293	1.850	19.3	66	0.00
66	T	Ethylbenzene	3.851	3.233	16.0	69	0.00
67	T	m- & p-Xylenes	3.050	2.722	10.8	73	0.00
68	T	Bromoform	0.822	0.725	11.8	66	0.00
69	T	Styrene	2.455	2.066	15.8	66	0.00
70	T	o-Xylene	3.187	2.843	10.8	73	0.00
71	T	n-Nonane	1.867	1.518	18.7	67	0.00
72	T	1,1,2,2-Tetrachloroethane	1.421	1.352	4.9	73	0.00
73	S	Bromofluorobenzene (SS3)	1.069	1.112	-4.0	86	0.00
74	T	Cumene	4.188	3.558	15.0	69	0.00
75	T	alpha-Pinene	2.115	1.763	16.6	67	0.00
76	T	n-Propylbenzene	4.810	4.208	12.5	70	0.00
77	T	3-Ethyltoluene	4.086	3.621	11.4	67	0.00
78	T	4-Ethyltoluene	3.665	3.177	13.3	73	0.00
79	T	1,3,5-Trimethylbenzene	3.267	2.871	12.1	70	0.00
80	T	alpha-Methylstyrene	1.854	1.652	10.9	66	0.00
81	T	2-Ethyltoluene	3.848	3.389	11.9	70	0.00
82	T	1,2,4-Trimethylbenzene	3.349	3.179	5.1	75	0.00
83	T	n-Decane	1.823	1.754	3.8	77	0.00
84	T	Benzyl Chloride	2.557	2.693	-5.3	73	0.00
85	T	1,3-Dichlorobenzene	1.989	1.850	7.0	71	0.00
86	T	1,4-Dichlorobenzene	2.056	1.730	15.9	67	0.00
87	T	sec-Butylbenzene	4.281	3.800	11.2	70	0.00
88	T	4-Isopropyltoluene (p-Cymen	4.286	4.006	6.5	73	0.00
89	T	1,2,3-Trimethylbenzene	3.377	3.214	4.8	74	0.00
90	T	1,2-Dichlorobenzene	1.908	1.648	13.6	67	0.00
91	T	d-Limonene	1.296	1.160	10.5	68	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.700	0.643	8.1	65	0.00
93	T	n-Undecane	1.904	1.665	12.6	68	0.00
94	T	1,2,4-Trichlorobenzene	1.524	1.311	14.0	65	0.00
95	T	Naphthalene	4.500	4.293	4.6	66	0.00
96	T	n-Dodecane	1.879	1.666	11.3	68	0.00
97	T	Hexachlorobutadiene	0.966	0.808	16.4	66	0.00
98	T	Cyclohexanone	1.207	0.980	18.8	59	0.00
99	T	tert-Butylbenzene	3.353	3.044	9.2	73	0.00
100	T	n-Butylbenzene	3.292	2.956	10.2	71	0.00

Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

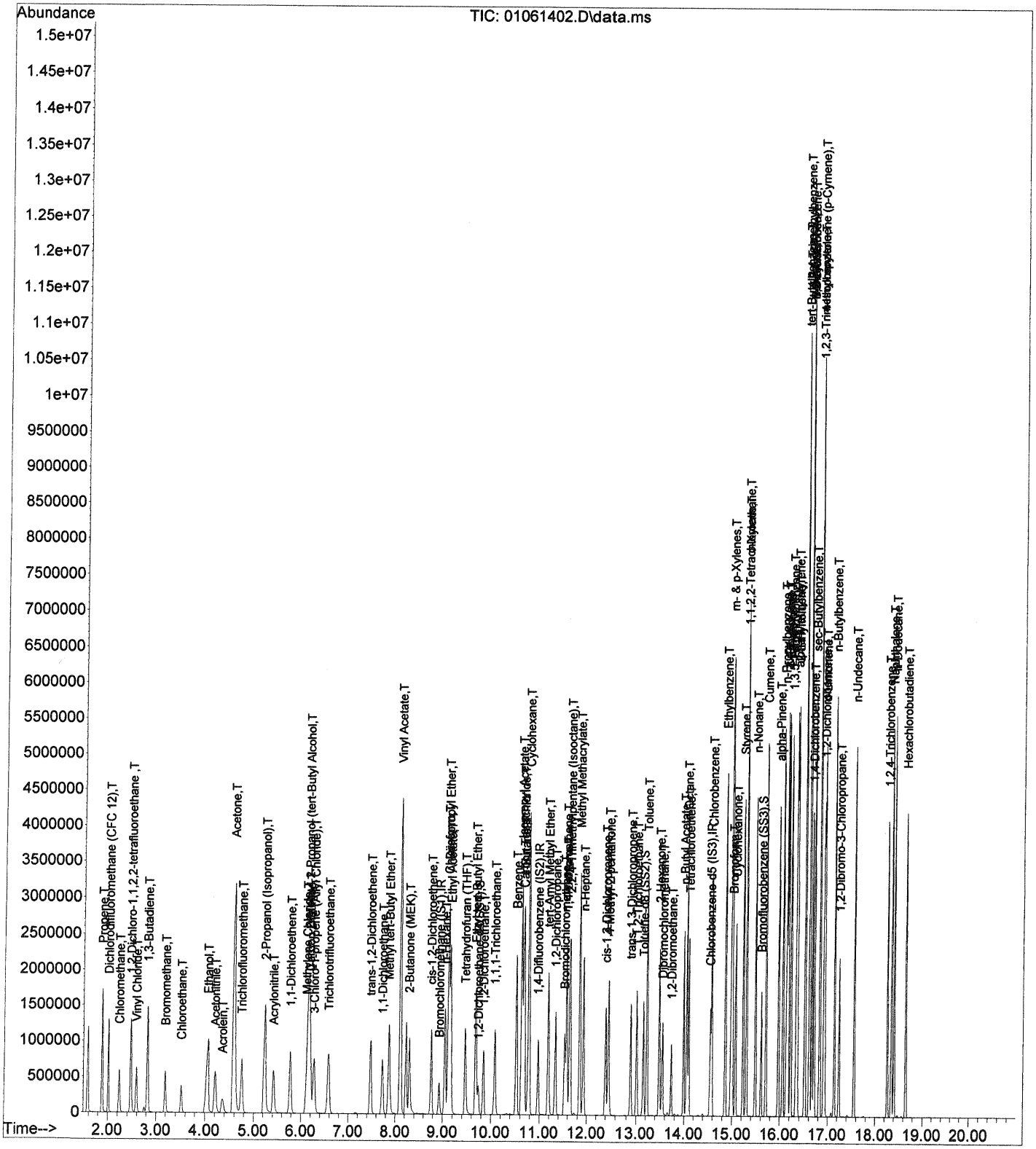
Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	177267	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.97	114	863171	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	385415	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	275260	14.286	ng		0.00
Spiked Amount 12.500			Recovery = 114.32%				
57) Toluene-d8 (SS2)	13.15	98	943356	11.490	ng		0.00
Spiked Amount 12.500			Recovery = 91.92%				
73) Bromofluorobenzene (SS3)	15.61	174	428750	13.011	ng		0.00
Spiked Amount 12.500			Recovery = 104.08%				
Target Compounds							Qvalue
2) Propene	1.88	42	503649	20.141	ng		95
3) Dichlorodifluoromethan...	2.01	85	1007709	23.827	ng		100
4) Chloromethane	2.24	50	691272	19.860	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	2.47	135	545132	21.242	ng		99
6) Vinyl Chloride	2.59	62	701784	20.245	ng		100
7) 1,3-Butadiene	2.82	54	726659	26.768	ng		97
8) Bromomethane	3.19	94	431444	20.156	ng		99
9) Chloroethane	3.52	64	379054	19.623	ng		100
10) Ethanol	4.06	45	1937349	112.556	ng		100
11) Acetonitrile	4.21	41	929588	19.635	ng		99
12) Acrolein	4.36	56	304803	21.073	ng		99
13) Acetone	4.60	58	2032566	117.846	ng	#	83
14) Trichlorofluoromethane	4.75	101	876234	22.378	ng		100
15) 2-Propanol (Isopropanol)	5.24	45	2874799	45.844	ng		96
16) Acrylonitrile	5.41	53	677915	22.888	ng		98
17) 1,1-Dichloroethene	5.78	96	500909	22.520	ng		93
18) 2-Methyl-2-Propanol (t...	6.16	59	2916311	47.452	ng		97
19) Methylene Chloride	6.12	84	522435	22.415	ng		98
20) 3-Chloro-1-propene (Al...	6.28	41	800133	20.701	ng		95
21) Trichlorotrifluoroethane	6.58	151	466247	22.619	ng		96
22) Carbon Disulfide	6.19	76	1795096	21.804	ng		100
23) trans-1,2-Dichloroethene	7.48	61	744813	23.471	ng		98
24) 1,1-Dichloroethane	7.73	63	907523	22.572	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1634219	23.991	ng		99
26) Vinyl Acetate	8.11	86	820133	127.492	ng	#	93
27) 2-Butanone (MEK)	8.30	72	372323	22.814	ng		98
28) cis-1,2-Dichloroethene	8.77	61	738382	24.816	ng		97
29) Diisopropyl Ether	9.12	87	548462	26.270	ng	#	98
30) Ethyl Acetate	9.16	61	383515	46.922	ng		98
31) n-Hexane	9.05	57	756716	22.936	ng		100
32) Chloroform	9.12	83	942294	25.060	ng		99
34) Tetrahydrofuran (THF)	9.47	72	360853	24.364	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	705316	23.833	ng		98
36) 1,2-Dichloroethane	9.85	62	726635	26.382	ng		100
38) 1,1,1-Trichloroethane	10.08	97	815217	24.528	ng		98
39) Isopropyl Acetate	10.63	61	680569	48.879	ng		95
40) 1-Butanol	10.69	56	1250881	53.855	ng		98
41) Benzene	10.52	78	2006785	24.498	ng		100
42) Carbon Tetrachloride	10.67	117	735105	25.993	ng		100
43) Cyclohexane	10.78	84	1755094	47.308	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1643709	23.954	ng		98
45) 1,2-Dichloropropane	11.34	63	517045	22.891	ng		100

Data File: I:\MS08\Data\2014_01\06\01061402.D
Acq On : 6 Jan 2014 8:00 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 06 09:35:51 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
46) Bromodichloromethane	11.53	83	738155	26.137	ng	100
47) Trichloroethene	11.57	130	611302	22.851	ng	100
48) 1,4-Dioxane	11.58	88	481019	25.731	ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	2356483	22.130	ng	94
50) Methyl Methacrylate	11.85	100	503921	46.888	ng	92
51) n-Heptane	11.93	71	542581	22.629	ng	99
52) cis-1,3-Dichloropropene	12.40	75	834276	24.006	ng	100
53) 4-Methyl-2-pentanone	12.46	58	526111	23.085	ng	97
54) trans-1,3-Dichloropropene	12.88	75	793156	25.403	ng	100
55) 1,1,2-Trichloroethane	13.00	97	523230	24.259	ng	98
58) Toluene	13.23	91	2227611	20.819	ng	99
59) 2-Hexanone	13.48	43	1357641	22.864	ng	97
60) Dibromochloromethane	13.55	129	632168	23.015	ng	100
61) 1,2-Dibromoethane	13.73	107	605403	21.930	ng	99
62) n-Butyl Acetate	13.99	43	1511505	22.844	ng	99
63) n-Octane	14.05	57	483763	20.456	ng	99
64) Tetrachloroethene	14.10	166	670872	19.285	ng	100
65) Chlorobenzene	14.58	112	1539983	21.779	ng	100
66) Ethylbenzene	14.86	91	2666331	22.455	ng	98
67) m- & p-Xylenes	14.99	91	4406348	46.850	ng	97
68) Bromoform	15.01	173	603262	23.811	ng	99
69) Styrene	15.23	104	1736031	22.938	ng	99
70) o-Xylene	15.30	91	2257558	22.977	ng	98
71) n-Nonane	15.49	43	1193599	20.732	ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1052802	24.035	ng	100
74) Cumene	15.72	105	2769725	21.452	ng	99
75) alpha-Pinene	15.97	93	1413501	21.674	ng	97
76) n-Propylbenzene	16.07	91	3243623	21.872	ng	98
77) 3-Ethyltoluene	16.14	105	2931138	23.266	ng	99
78) 4-Ethyltoluene	16.17	105	2571346	22.753	ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2346011	23.287	ng	98
80) alpha-Methylstyrene	16.33	118	1324166	23.158	ng	98
81) 2-Ethyltoluene	16.36	105	2742906	23.119	ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2573377	24.920	ng	97
83) n-Decane	16.61	57	1379065	24.541	ng	99
84) Benzyl Chloride	16.61	91	2283427	28.961	ng	97
85) 1,3-Dichlorobenzene	16.61	146	1568957	25.583	ng	100
86) 1,4-Dichlorobenzene	16.67	146	1413811	22.307	ng	99
87) sec-Butylbenzene	16.71	105	3133806	23.741	ng	98
88) 4-Isopropyltoluene (p-...	16.83	119	3149833	23.837	ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2650904	25.462	ng	98
90) 1,2-Dichlorobenzene	16.92	146	1371646	23.318	ng	100
91) d-Limonene	16.94	68	939203	23.501	ng	99
92) 1,2-Dibromo-3-Chloropr...	17.24	157	525065	24.325	ng	89
93) n-Undecane	17.56	57	1296580	22.083	ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1101755	23.453	ng	100
95) Naphthalene	18.35	128	3375654	24.329	ng	100
96) n-Dodecane	18.41	57	1335958	23.061	ng	100
97) Hexachlorobutadiene	18.65	225	678525	22.781	ng	100
98) Cyclohexanone	15.08	55	845833	22.723	ng	96
99) tert-Butylbenzene	16.51	119	2510906	24.284	ng	100
100) n-Butylbenzene	17.15	91	2506577	24.692	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\06\01061403.D
Acq On : 6 Jan 2014 8:29 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 09:38:46 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

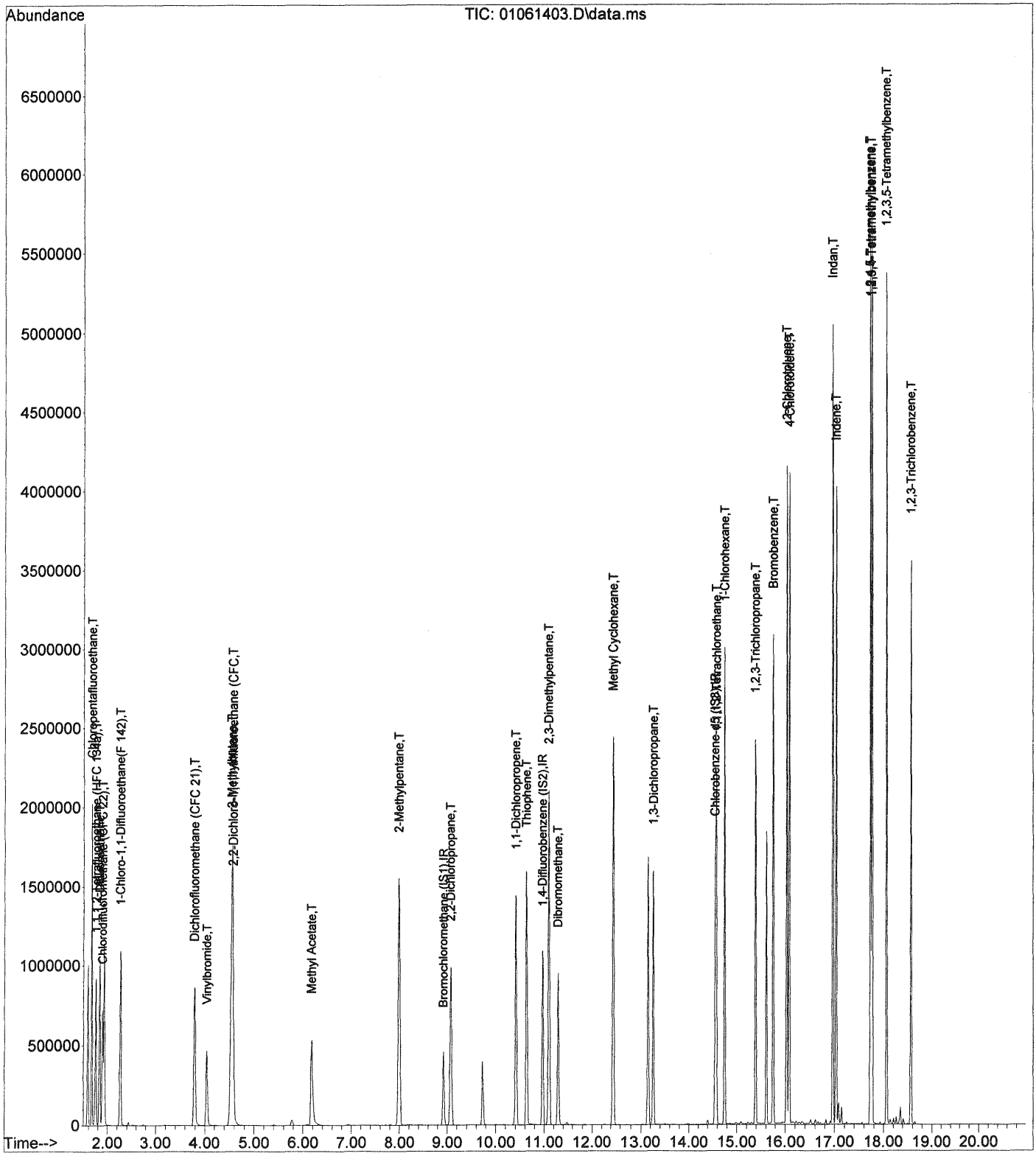
		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	75	0.00
2	T	Chloropentafluoroethane	1.540	1.472	4.4	69	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.129	1.149	-1.8	73	0.00
4	T	1,1-Difluoroethane	1.146	0.993	13.4	62	-0.01
5	T	Chlorodifluoromethane (CFC	0.343	0.358	-4.4	74	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.308	2.425	-5.1	76	-0.01
7	T	Dichlorofluoromethane (CFC	2.801	2.541	9.3	65	0.00
8	T	Vinylbromide	1.215	1.038	14.6	61	-0.01
9	T	2,2-Dichloro-1,1,1-trifluor	1.877	1.650	12.1	64	0.00
10	T	2-Methylbutane	1.532	1.305	14.8	62	-0.01
11	T	Methyl Acetate	3.373	2.934	13.0	62	0.00
12	T	2-Methylpentane	1.501	1.291	14.0	64	-0.01
13	T	2,2-Dichloropropane	2.181	1.809	17.1	60	-0.01
14	T	1,1-Dichloropropene	2.005	1.807	9.9	67	-0.01
15	T	Thiophene	3.180	2.747	13.6	63	-0.01
16	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	78	0.00
17	T	2,3-Dimethylpentane	0.569	0.490	13.9	64	-0.02
18	T	Dibromomethane	0.244	0.210	13.9	62	-0.01
19	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	86	0.00
20	T	Methyl Cyclohexane	1.078	0.828	23.2	64	-0.02
21	T	1,3-Dichloropropane	1.157	0.909	21.4	65	-0.01
22	T	1,1,1,2-Tetrachloroethane	0.700	0.551	21.3	64	0.00
23	T	1-Chlorohexane	1.142	0.892	21.9	66	-0.01
24	T	1,2,3-Trichloropropane	1.058	0.859	18.8	66	-0.01
25	T	Bromobenzene	1.289	1.051	18.5	67	0.00
26	T	2-Chlorotoluene	2.313	1.905	17.6	67	-0.01
27	T	4-Chlorotoluene	2.375	1.970	17.1	67	-0.01
28	T	Indan	2.825	2.355	16.6	65	0.00
29	T	Indene	2.132	1.910	10.4	61	-0.01
30	T	1,2,4,5-Tetramethylbenzene	2.974	2.651	10.9	65	-0.01
31	T	1,2,3,4-Tetramethylbenzene	2.929	2.637	10.0	68	-0.01
32	T	1,2,3,5-Tetramethylbenzene	2.862	2.550	10.9	66	-0.01
33	T	1,2,3-Trichlorobenzene	1.196	1.033	13.6	63	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

JM 1/6/14

Data File: I:\MS08\Data\2014_01\06\01061403.D
Acq On : 6 Jan 2014 8:29 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 09:38:46 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2014_01\06\01061403.D
Acq On : 6 Jan 2014 8:29 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 06 09:38:46 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	188096	12.500	ng	0.00
16) 1,4-Difluorobenzene (IS2)	10.97	114	926064	12.500	ng	0.00
19) Chlorobenzene-d5 (IS3)	14.55	82	435688	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.67	85	586822	25.331	ng	97
3) 1,1,1,2-Tetrafluoroeth...	1.76	83	449365	26.451	ng	90
4) 1,1-Difluoroethane	1.84	65	399829	23.184	ng	97
5) Chlorodifluoromethane ...	1.90	67	142700	27.630	ng	83
6) 1-Chloro-1,1-Difluoroe...	2.26	65	948561	27.308	ng	96
7) Dichlorofluoromethane ...	3.78	67	984525	23.358	ng	100
8) Vinylbromide	4.04	108	394365	21.564	ng	99
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	645554	22.858	ng	100
10) 2-Methylbutane	4.54	57	515324	22.355	ng	90
11) Methyl Acetate	6.17	43	1026552	20.226	ng	100
12) 2-Methylpentane	7.99	71	475923	21.068	ng	97
13) 2,2-Dichloropropane	9.07	77	707608	21.559	ng	99
14) 1,1-Dichloropropene	10.41	75	700349	23.216	ng	92
15) Thiophene	10.64	84	1053901	22.026	ng	98
17) 2,3-Dimethylpentane	11.10	56	943648	22.400	ng	97
18) Dibromomethane	11.29	174	408528	22.580	ng	96
20) Methyl Cyclohexane	12.45	55	772071	20.540	ng	99
21) 1,3-Dichloropropane	13.26	76	839755	20.828	ng	97
22) 1,1,1,2-Tetrachloroethane	14.58	131	527987	21.633	ng	100
23) 1-Chlorohexane	14.75	91	808142	20.298	ng	98
24) 1,2,3-Trichloropropane	15.38	75	793404	21.514	ng	99
25) Bromobenzene	15.75	77	980059	21.817	ng	97
26) 2-Chlorotoluene	16.03	91	1826270	22.657	ng	98
27) 4-Chlorotoluene	16.08	91	1836955	22.189	ng	98
28) Indan	16.96	117	2113878	21.468	ng	99
29) Indene	17.03	115	1714070	23.069	ng	98
30) 1,2,4,5-Tetramethylben...	17.73	119	2379431	22.955	ng	98
31) 1,2,3,4-Tetramethylben...	17.76	119	2366966	23.182	ng	98
32) 1,2,3,5-Tetramethylben...	18.06	119	2266549	22.721	ng	98
33) 1,2,3-Trichlorobenzene	18.57	180	935713	22.453	ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

1/6/14

Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	67	0.01
2	T	Propene	1.763	1.450	17.8	59	-0.03
3	T	Dichlorodifluoromethane (CF	2.982	2.876	3.6	71	-0.03
4	T	Chloromethane	2.454	2.016	17.8	58	-0.01
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.810	1.558	13.9	64	-0.02
6	T	Vinyl Chloride	2.444	2.058	15.8	60	-0.01
7	T	1,3-Butadiene	1.914	1.727	9.8	64	0.00
8	T	Bromomethane	1.509	1.255	16.8	60	0.00
9	T	Chloroethane	1.362	1.100	19.2	58	0.00
10	T	Ethanol	1.214	1.065	12.3	60	0.06
11	T	Acetonitrile	3.338	2.596	22.2	56	0.02
12	T	Acrolein	1.020	0.831	18.5	58	0.00
13	T	Acetone	1.216	1.086	10.7	64	0.00
14	T	Trichlorofluoromethane	2.761	2.519	8.8	69	0.00
15	T	2-Propanol (Isopropanol)	4.422	3.891	12.0	62	-0.01
16	T	Acrylonitrile	2.089	1.833	12.3	60	0.01
17	T	1,1-Dichloroethene	1.568	1.356	13.5	62	0.00
18	T	2-Methyl-2-Propanol (tert-B	4.334	3.957	8.7	64	-0.06
19	T	Methylene Chloride	1.644	1.473	10.4	64	0.03
20	T	3-Chloro-1-propene (Allyl C	2.725	2.097	23.0	58	0.01
21	T	Trichlorotrifluoroethane	1.454	1.229	15.5	62	0.00
22	T	Carbon Disulfide	5.805	5.163	11.1	61	0.01
23	T	trans-1,2-Dichloroethene	2.238	2.031	9.2	64	0.01
24	T	1,1-Dichloroethane	2.835	2.468	12.9	65	0.01
25	T	Methyl tert-Butyl Ether	4.803	4.438	7.6	68	-0.05
26	T	Vinyl Acetate	0.454	0.453	0.2	69	0.00
27	T	2-Butanone (MEK)	1.151	0.986	14.3	64	-0.05
28	T	cis-1,2-Dichloroethene	2.098	1.915	8.7	65	0.01
29	T	Diisopropyl Ether	1.472	1.461	0.7	68	-0.03
30	T	Ethyl Acetate	0.576	0.519	9.9	66	-0.04
31	T	n-Hexane	2.326	2.064	11.3	68	0.00
32	T	Chloroform	2.651	2.508	5.4	70	0.01
33	S	1,2-Dichloroethane-d4(SS1)	1.359	1.545	-13.7	78	0.00
34	T	Tetrahydrofuran (THF)	1.044	0.950	9.0	62	-0.07
35	T	Ethyl tert-Butyl Ether	2.087	1.907	8.6	66	-0.03
36	T	1,2-Dichloroethane	1.942	1.933	0.5	72	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	70	0.00
38	T	1,1,1-Trichloroethane	0.481	0.455	5.4	71	0.00
39	T	Isopropyl Acetate	0.202	0.180	10.9	65	-0.02
40	T	1-Butanol	0.336	0.330	1.8	58	-0.02
41	T	Benzene	1.186	1.055	11.0	65	0.00
42	T	Carbon Tetrachloride	0.410	0.404	1.5	70	0.00
43	T	Cyclohexane	0.537	0.491	8.6	68	0.00
44	T	tert-Amyl Methyl Ether	0.994	0.912	8.2	66	-0.03
45	T	1,2-Dichloropropane	0.327	0.280	14.4	64	0.00
46	T	Bromodichloromethane	0.409	0.396	3.2	69	0.00
47	T	Trichloroethene	0.387	0.339	12.4	66	0.00
48	T	1,4-Dioxane	0.271	0.252	7.0	64	-0.04
49	T	2,2,4-Trimethylpentane (Iso	1.542	1.317	14.6	64	0.00
50	T	Methyl Methacrylate	0.156	0.140	10.3	64	-0.02

Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	T	n-Heptane	0.347	0.294	15.3	67	0.00
52	T	cis-1,3-Dichloropropene	0.503	0.471	6.4	65	0.00
53	T	4-Methyl-2-pentanone	0.330	0.282	14.5	61	-0.03
54	T	trans-1,3-Dichloropropene	0.452	0.443	2.0	66	0.00
55	T	1,1,2-Trichloroethane	0.312	0.286	8.3	66	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	79	0.00
57	S	Toluene-d8 (SS2)	2.663	2.480	6.9	72	0.00
58	T	Toluene	3.470	2.766	20.3	67	0.00
59	T	2-Hexanone	1.926	1.592	17.3	63	-0.02
60	T	Dibromochloromethane	0.891	0.775	13.0	67	0.00
61	T	1,2-Dibromoethane	0.895	0.745	16.8	66	0.00
62	T	n-Butyl Acetate	2.146	1.770	17.5	62	0.00
63	T	n-Octane	0.767	0.618	19.4	66	0.00
64	T	Tetrachloroethene	1.128	0.906	19.7	65	0.00
65	T	Chlorobenzene	2.293	1.870	18.4	66	0.00
66	T	Ethylbenzene	3.851	3.272	15.0	69	0.00
67	T	m- & p-Xylenes	3.050	2.750	9.8	72	0.00
68	T	Bromoform	0.822	0.733	10.8	66	0.00
69	T	Styrene	2.455	2.094	14.7	66	0.00
70	T	o-Xylene	3.187	2.854	10.4	72	0.00
71	T	n-Nonane	1.867	1.526	18.3	67	0.00
72	T	1,1,2,2-Tetrachloroethane	1.421	1.367	3.8	72	0.00
73	S	Bromofluorobenzene (SS3)	1.069	1.076	-0.7	82	0.00
74	T	Cumene	4.188	3.594	14.2	69	0.00
75	T	alpha-Pinene	2.115	1.788	15.5	67	0.00
76	T	n-Propylbenzene	4.810	4.247	11.7	69	0.00
77	T	3-Ethyltoluene	4.086	3.640	10.9	67	0.00
78	T	4-Ethyltoluene	3.665	3.208	12.5	72	0.00
79	T	1,3,5-Trimethylbenzene	3.267	2.880	11.8	69	0.00
80	T	alpha-Methylstyrene	1.854	1.661	10.4	65	0.00
81	T	2-Ethyltoluene	3.848	3.425	11.0	69	0.00
82	T	1,2,4-Trimethylbenzene	3.349	3.170	5.3	73	0.00
83	T	n-Decane	1.823	1.724	5.4	74	0.00
84	T	Benzyl Chloride	2.557	2.674	-4.6	71	0.00
85	T	1,3-Dichlorobenzene	1.989	1.850	7.0	70	0.00
86	T	1,4-Dichlorobenzene	2.056	1.752	14.8	66	0.00
87	T	sec-Butylbenzene	4.281	3.838	10.3	69	0.00
88	T	4-Isopropyltoluene (p-Cymen	4.286	3.955	7.7	71	0.00
89	T	1,2,3-Trimethylbenzene	3.377	3.172	6.1	72	0.00
90	T	1,2-Dichlorobenzene	1.908	1.654	13.3	67	0.00
91	T	d-Limonene	1.296	1.157	10.7	66	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.700	0.641	8.4	63	0.00
93	T	n-Undecane	1.904	1.659	12.9	67	0.00
94	T	1,2,4-Trichlorobenzene	1.524	1.299	14.8	63	0.00
95	T	Naphthalene	4.500	4.240	5.8	64	0.00
96	T	n-Dodecane	1.879	1.626	13.5	65	0.00
97	T	Hexachlorobutadiene	0.966	0.791	18.1	63	0.00
98	T	Cyclohexanone	1.207	0.991	17.9	59	0.00
99	T	tert-Butylbenzene	3.353	3.045	9.2	71	0.00
100	T	n-Butylbenzene	3.292	2.958	10.1	70	0.00

Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

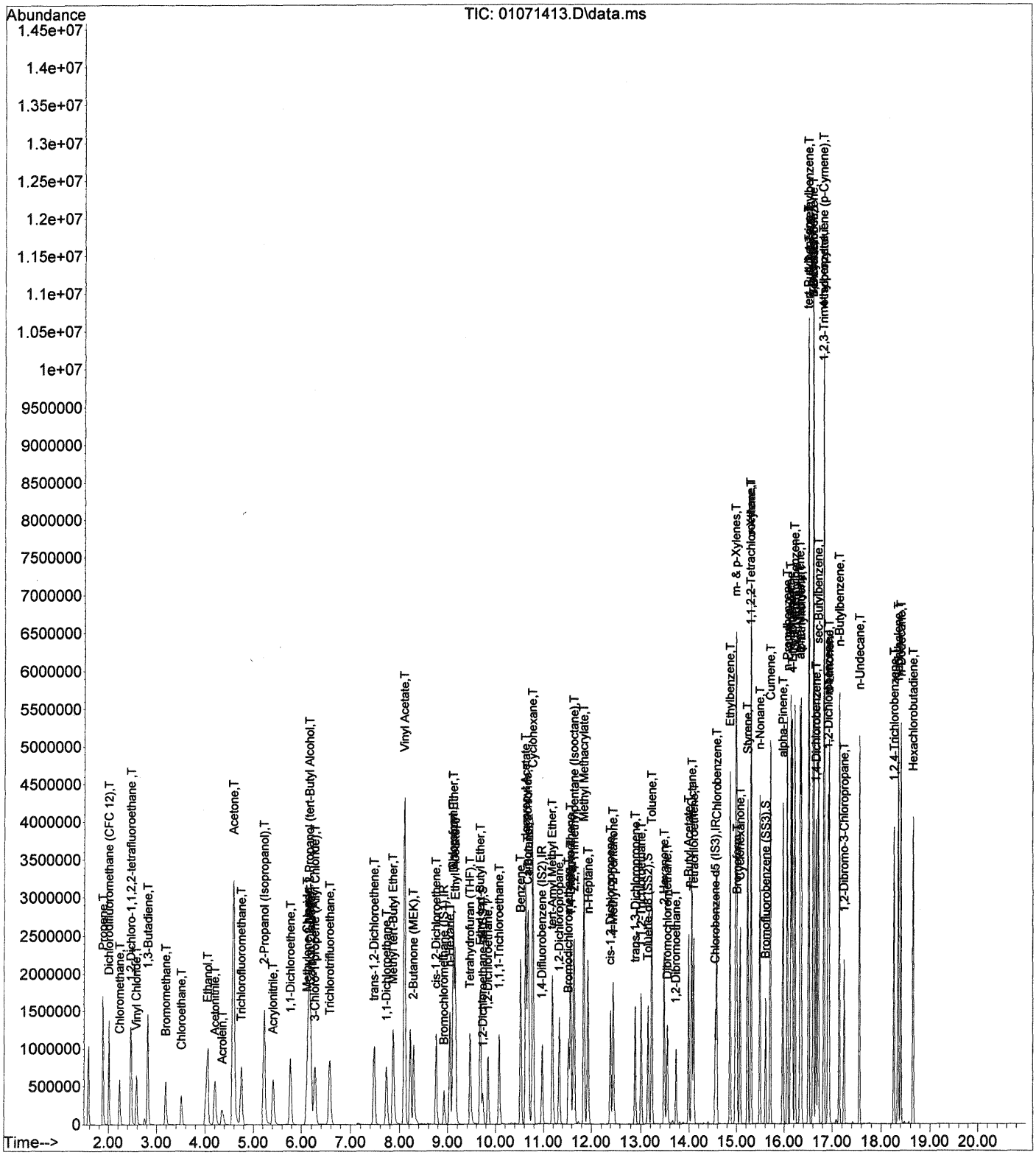
Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.93	130	177726	12.500	ng		0.01
37) 1,4-Difluorobenzene (IS2)	10.97	114	868900	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.55	82	378742	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.74	65	274672	14.219	ng		0.00
Spiked Amount 12.500			Recovery = 113.76%				
57) Toluene-d8 (SS2)	13.15	98	939353	11.642	ng		0.00
Spiked Amount 12.500			Recovery = 93.12%				
73) Bromofluorobenzene (SS3)	15.61	174	407592	12.587	ng		0.00
Spiked Amount 12.500			Recovery = 100.72%				
Target Compounds							Qvalue
2) Propene	1.88	42	505022	20.143	ng		96
3) Dichlorodifluoromethan...	2.01	85	1022352	24.111	ng		100
4) Chloromethane	2.24	50	687896	19.712	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	2.47	135	553798	21.524	ng		99
6) Vinyl Chloride	2.58	62	709535	20.416	ng		100
7) 1,3-Butadiene	2.82	54	724434	26.617	ng		97
8) Bromomethane	3.19	94	432822	20.168	ng		99
9) Chloroethane	3.51	64	379430	19.592	ng		100
10) Ethanol	4.06	45	1911239	110.752	ng		100
11) Acetonitrile	4.21	41	913384	19.243	ng		97
12) Acrolein	4.36	56	309991	21.377	ng		99
13) Acetone	4.59	58	2041170	118.039	ng	#	84
14) Trichlorofluoromethane	4.75	101	886572	22.583	ng		99
15) 2-Propanol (Isopropanol)	5.23	45	2890248	45.971	ng		96
16) Acrylonitrile	5.41	53	677582	22.818	ng		99
17) 1,1-Dichloroethene	5.77	96	511070	22.917	ng		93
18) 2-Methyl-2-Propanol (t...	6.16	59	2925405	47.477	ng		98
19) Methylene Chloride	6.12	84	528691	22.625	ng		99
20) 3-Chloro-1-propene (Al...	6.27	41	804848	20.770	ng		93
21) Trichlorotrifluoroethane	6.58	151	471845	22.831	ng		97
22) Carbon Disulfide	6.19	76	1798611	21.790	ng		100
23) trans-1,2-Dichloroethene	7.47	61	750795	23.598	ng		99
24) 1,1-Dichloroethane	7.73	63	912378	22.634	ng		100
25) Methyl tert-Butyl Ether	7.87	73	1656513	24.256	ng		99
26) Vinyl Acetate	8.11	86	821945	127.444	ng	#	95
27) 2-Butanone (MEK)	8.30	72	375133	22.927	ng		100
28) cis-1,2-Dichloroethene	8.77	61	735335	24.650	ng		98
29) Diisopropyl Ether	9.13	87	555608	26.543	ng	#	100
30) Ethyl Acetate	9.16	61	385800	47.080	ng		98
31) n-Hexane	9.05	57	755738	22.847	ng		99
32) Chloroform	9.12	83	945065	25.069	ng		99
34) Tetrahydrofuran (THF)	9.47	72	361435	24.340	ng		98
35) Ethyl tert-Butyl Ether	9.69	87	711654	23.985	ng		98
36) 1,2-Dichloroethane	9.85	62	721479	26.127	ng		100
38) 1,1,1-Trichloroethane	10.08	97	814606	24.348	ng		98
39) Isopropyl Acetate	10.63	61	681309	48.610	ng	#	91
40) 1-Butanol	10.69	56	1254842	53.669	ng		99
41) Benzene	10.52	78	2015884	24.447	ng		100
42) Carbon Tetrachloride	10.67	117	729380	25.620	ng		100
43) Cyclohexane	10.78	84	1757760	47.067	ng		99
44) tert-Amyl Methyl Ether	11.19	73	1648452	23.865	ng		99
45) 1,2-Dichloropropane	11.34	63	515689	22.681	ng		99

Data File: I:\MS08\Data\2014_01\07\01071413.D
Acq On : 7 Jan 2014 7:35 Operator: WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 07 10:38:19 2014
Quant Method : I:\MS08\Methods\R8111913.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Nov 20 08:04:51 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
46) Bromodichloromethane	11.53	83	736293	25.899 ng	100
47) Trichloroethene	11.57	130	612563	22.747 ng	100
48) 1,4-Dioxane	11.58	88	478243	25.414 ng	99
49) 2,2,4-Trimethylpentane...	11.65	57	2357664	21.995 ng	94
50) Methyl Methacrylate	11.85	100	505985	46.770 ng	93
51) n-Heptane	11.93	71	537129	22.254 ng	99
52) cis-1,3-Dichloropropene	12.40	75	834651	23.858 ng	100
53) 4-Methyl-2-pentanone	12.46	58	524866	22.879 ng	97
54) trans-1,3-Dichloropropene	12.89	75	793419	25.244 ng	100
55) 1,1,2-Trichloroethane	13.00	97	526769	24.262 ng	98
58) Toluene	13.23	91	2220805	21.122 ng	99
59) 2-Hexanone	13.48	43	1338902	22.946 ng	98
60) Dibromochloromethane	13.54	129	634329	23.501 ng	100
61) 1,2-Dibromoethane	13.73	107	604164	22.270 ng	100
62) n-Butyl Acetate	13.99	43	1501564	23.094 ng	98
63) n-Octane	14.05	57	482360	20.756 ng	99
64) Tetrachloroethene	14.10	166	672289	19.666 ng	99
65) Chlorobenzene	14.58	112	1530044	22.020 ng	100
66) Ethylbenzene	14.86	91	2652297	22.731 ng	98
67) m- & p-Xylenes	14.99	91	4374637	47.333 ng	98
68) Bromoform	15.01	173	599519	24.080 ng	99
69) Styrene	15.23	104	1728604	23.242 ng	99
70) o-Xylene	15.30	91	2226367	23.059 ng	98
71) n-Nonane	15.49	43	1178659	20.833 ng	100
72) 1,1,2,2-Tetrachloroethane	15.30	83	1045889	24.297 ng	100
74) Cumene	15.72	105	2749383	21.669 ng	99
75) alpha-Pinene	15.97	93	1408777	21.982 ng	97
76) n-Propylbenzene	16.07	91	3216801	22.073 ng	99
77) 3-Ethyltoluene	16.14	105	2894822	23.383 ng	99
78) 4-Ethyltoluene	16.17	105	2551495	22.975 ng	99
79) 1,3,5-Trimethylbenzene	16.23	105	2312629	23.360 ng	98
80) alpha-Methylstyrene	16.33	118	1308772	23.292 ng	98
81) 2-Ethyltoluene	16.36	105	2724060	23.365 ng	99
82) 1,2,4-Trimethylbenzene	16.52	105	2521565	24.849 ng	98
83) n-Decane	16.61	57	1332183	24.124 ng	99
84) Benzyl Chloride	16.61	91	2228378	28.761 ng	97
85) 1,3-Dichlorobenzene	16.61	146	1541543	25.579 ng	100
86) 1,4-Dichlorobenzene	16.67	146	1406996	22.590 ng	100
87) sec-Butylbenzene	16.71	105	3110797	23.982 ng	98
88) 4-Isopropyltoluene (p-...	16.83	119	3056005	23.534 ng	98
89) 1,2,3-Trimethylbenzene	16.82	105	2571143	25.131 ng	99
90) 1,2-Dichlorobenzene	16.92	146	1353323	23.412 ng	100
91) d-Limonene	16.94	68	920580	23.440 ng	99
92) 1,2-Dibromo-3-Chloropr...	17.24	157	514541	24.257 ng	89
93) n-Undecane	17.56	57	1269087	21.995 ng	100
94) 1,2,4-Trichlorobenzene	18.27	180	1072581	23.234 ng	100
95) Naphthalene	18.35	128	3276351	24.029 ng	100
96) n-Dodecane	18.41	57	1281015	22.502 ng	100
97) Hexachlorobutadiene	18.65	225	652793	22.303 ng	100
98) Cyclohexanone	15.08	55	840872	22.987 ng	97
99) tert-Butylbenzene	16.51	119	2467614	24.285 ng	100
100) n-Butylbenzene	17.15	91	2464854	24.709 ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File: I:\MS08\Data\2014_01\07\01071412.D
Acq On : 7 Jan 2014 7:06 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 08 06:23:47 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

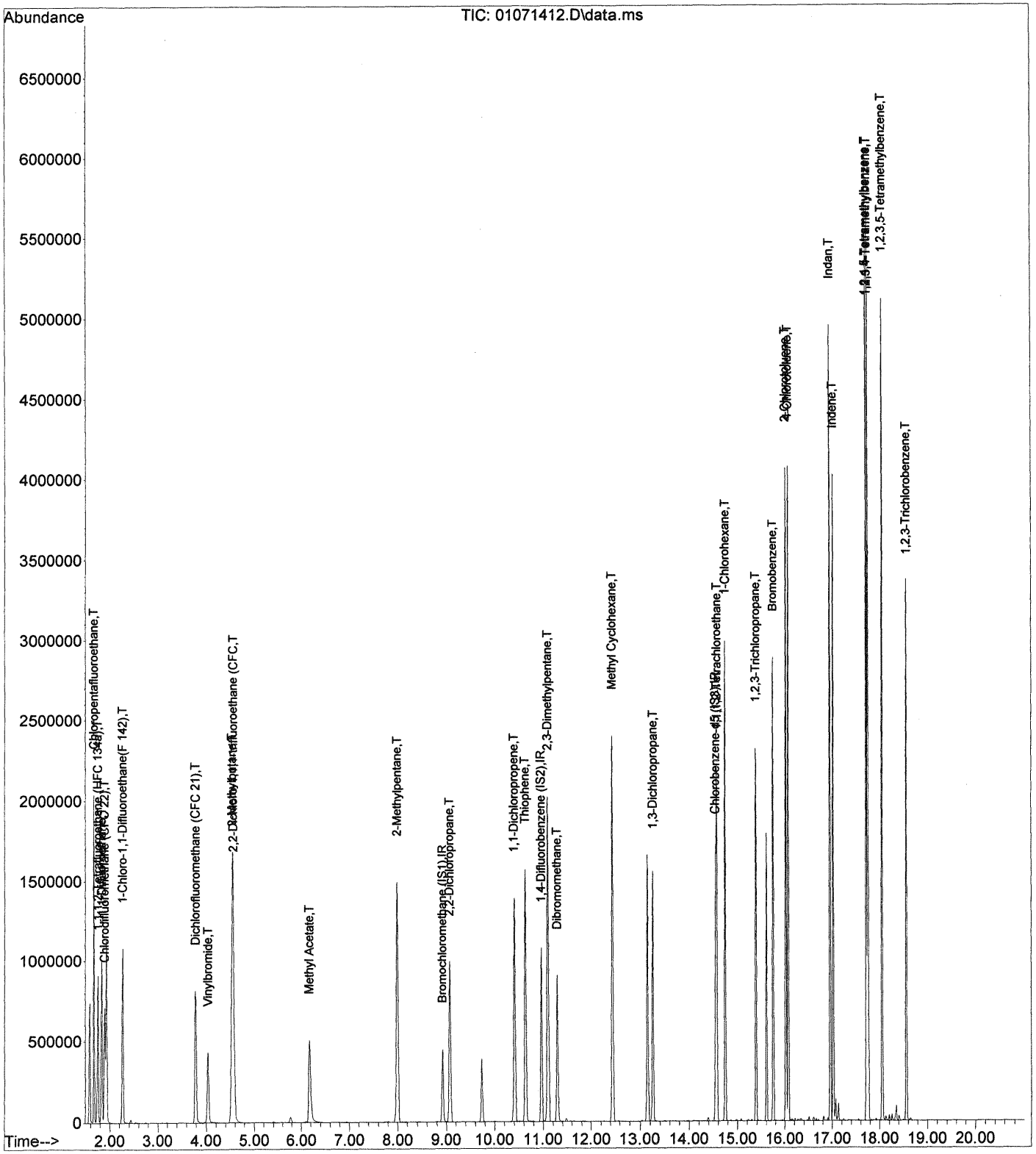
		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	73	-0.01
2	T	Chloropentafluoroethane	1.540	1.456	5.5	66	0.00
3	T	1,1,1,2-Tetrafluoroethane (	1.129	1.152	-2.0	71	-0.01
4	T	1,1-Difluoroethane	1.146	0.976	14.8	59	-0.02
5	T	Chlorodifluoromethane (CFC	0.343	0.363	-5.8	73	0.00
6	T	1-Chloro-1,1-Difluoroethane	2.308	2.425	-5.1	74	-0.01
7	T	Dichlorofluoromethane (CFC	2.801	2.460	12.2	61	0.00
8	T	Vinylbromide	1.215	0.998	17.9	56	-0.02
9	T	2,2-Dichloro-1,1,1-trifluor	1.877	1.635	12.9	62	-0.01
10	T	2-Methylbutane	1.532	1.292	15.7	60	-0.02
11	T	Methyl Acetate	3.373	2.872	14.9	58	-0.01
12	T	2-Methylpentane	1.501	1.283	14.5	62	-0.01
13	T	2,2-Dichloropropane	2.181	1.836	15.8	59	-0.01
14	T	1,1-Dichloropropene	2.005	1.799	10.3	64	-0.02
15	T	Thiophene	3.180	2.735	14.0	61	-0.02
16	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	76	-0.01
17	T	2,3-Dimethylpentane	0.569	0.488	14.2	62	-0.02
18	T	Dibromomethane	0.244	0.209	14.3	60	-0.01
19	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	82	0.00
20	T	Methyl Cyclohexane	1.078	0.844	21.7	63	-0.02
21	T	1,3-Dichloropropane	1.157	0.921	20.4	63	-0.01
22	T	1,1,1,2-Tetrachloroethane	0.700	0.556	20.6	62	0.00
23	T	1-Chlorohexane	1.142	0.904	20.8	63	-0.01
24	T	1,2,3-Trichloropropane	1.058	0.876	17.2	64	-0.01
25	T	Bromobenzene	1.289	1.074	16.7	65	0.00
26	T	2-Chlorotoluene	2.313	1.950	15.7	65	-0.01
27	T	4-Chlorotoluene	2.375	2.007	15.5	66	-0.01
28	T	Indan	2.825	2.397	15.2	64	0.00
29	T	Indene	2.132	1.923	9.8	59	-0.01
30	T	1,2,4,5-Tetramethylbenzene	2.974	2.716	8.7	63	-0.01
31	T	1,2,3,4-Tetramethylbenzene	2.929	2.651	9.5	65	-0.01
32	T	1,2,3,5-Tetramethylbenzene	2.862	2.601	9.1	64	-0.01
33	T	1,2,3-Trichlorobenzene	1.196	1.044	12.7	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

1/8/14

Data File: I:\MS08\Data\2014_01\07\01071412.D
Acq On : 7 Jan 2014 7:06 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 08 06:23:47 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File: I:\MS08\Data\2014_01\07\01071412.D
Acq On : 7 Jan 2014 7:06 Operator: WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jan 08 06:23:47 2014
Quant Method : I:\MS08\Methods\ACF8111913.M
Quant Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
QLast Update : Wed Nov 20 13:26:29 2013
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.92	130	182452	12.500	ng	-0.01
16) 1,4-Difluorobenzene (IS2)	10.97	114	902882	12.500	ng	-0.01
19) Chlorobenzene-d5 (IS3)	14.55	82	416246	12.500	ng	0.00
Target Compounds						**Qvalue**
2) Chloropentafluoroethane	1.66	85	563054	25.057	ng	97
3) 1,1,1,2-Tetrafluoroeth...	1.75	83	437253	26.534	ng	88
4) 1,1-Difluoroethane	1.83	65	381164	22.785	ng	97
5) Chlorodifluoromethane ...	1.89	67	140571	28.059	ng	80
6) 1-Chloro-1,1-Difluoroe...	2.26	65	920467	27.319	ng	95
7) Dichlorofluoromethane ...	3.78	67	924774	22.619	ng	100
8) Vinylbromide	4.03	108	367713	20.729	ng	100
9) 2,2-Dichloro-1,1,1-tri...	4.56	83	620395	22.647	ng	100
10) 2-Methylbutane	4.54	57	495208	22.147	ng	91
11) Methyl Acetate	6.17	43	974500	19.794	ng	100
12) 2-Methylpentane	7.99	71	458883	20.943	ng	98
13) 2,2-Dichloropropane	9.07	77	696715	21.884	ng	99
14) 1,1-Dichloropropene	10.41	75	676202	23.109	ng	92
15) Thiophene	10.63	84	1018064	21.935	ng	98
17) 2,3-Dimethylpentane	11.10	56	916202	22.306	ng	97
18) Dibromomethane	11.29	174	395603	22.427	ng	95
20) Methyl Cyclohexane	12.45	55	751428	20.925	ng	99
21) 1,3-Dichloropropane	13.26	76	812306	21.088	ng	97
22) 1,1,1,2-Tetrachloroethane	14.58	131	509490	21.850	ng	100
23) 1-Chlorohexane	14.75	91	782582	20.574	ng	98
24) 1,2,3-Trichloropropane	15.38	75	772883	21.936	ng	100
25) Bromobenzene	15.75	77	956807	22.294	ng	97
26) 2-Chlorotoluene	16.03	91	1785976	23.192	ng	98
27) 4-Chlorotoluene	16.08	91	1787578	22.601	ng	98
28) Indan	16.96	117	2055240	21.847	ng	99
29) Indene	17.03	115	1648931	23.229	ng	99
30) 1,2,4,5-Tetramethylben...	17.73	119	2329170	23.520	ng	98
31) 1,2,3,4-Tetramethylben...	17.76	119	2273197	23.304	ng	99
32) 1,2,3,5-Tetramethylben...	18.06	119	2208278	23.171	ng	98
33) 1,2,3-Trichlorobenzene	18.57	180	903855	22.702	ng	99

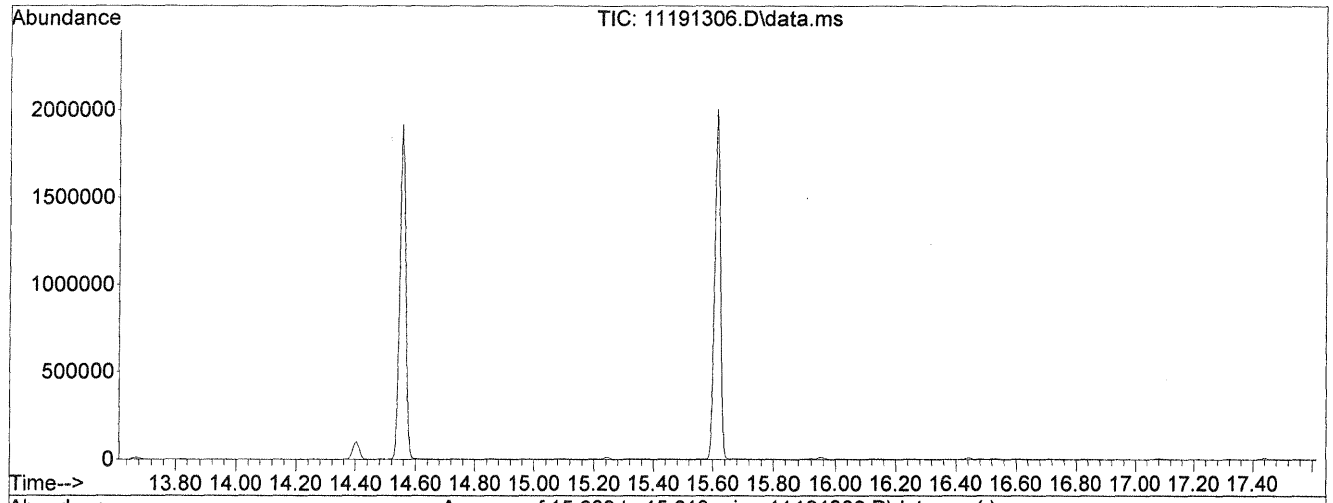
(#) = qualifier out of range (m) = manual integration (+) = signals summed

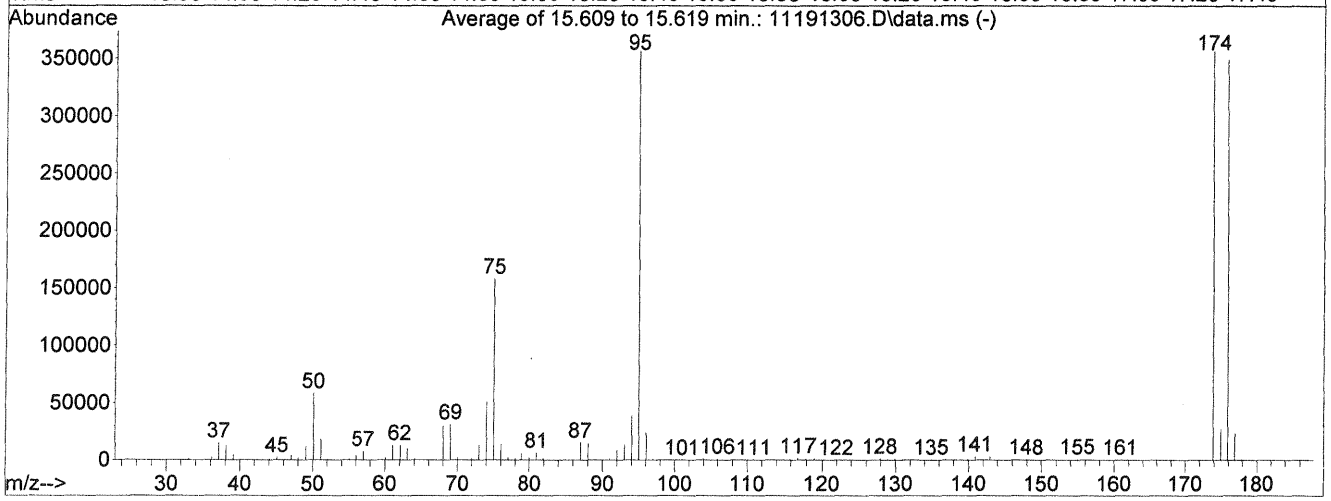
DA 1/8/14

Data Path : I:\MS08\Data\2013_11\19\
Data File : 11191306.D
Acq On : 19 Nov 2013 13:37
Operator : EM/CD
Sample : 12.5ng TO-15 BFB Std
Misc : S25-11181301
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : I:\MS08\Methods\R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Nov 20 07:15:01 2013





AutoFind: Scans 2626, 2627, 2628; Background Corrected with Scan 2619

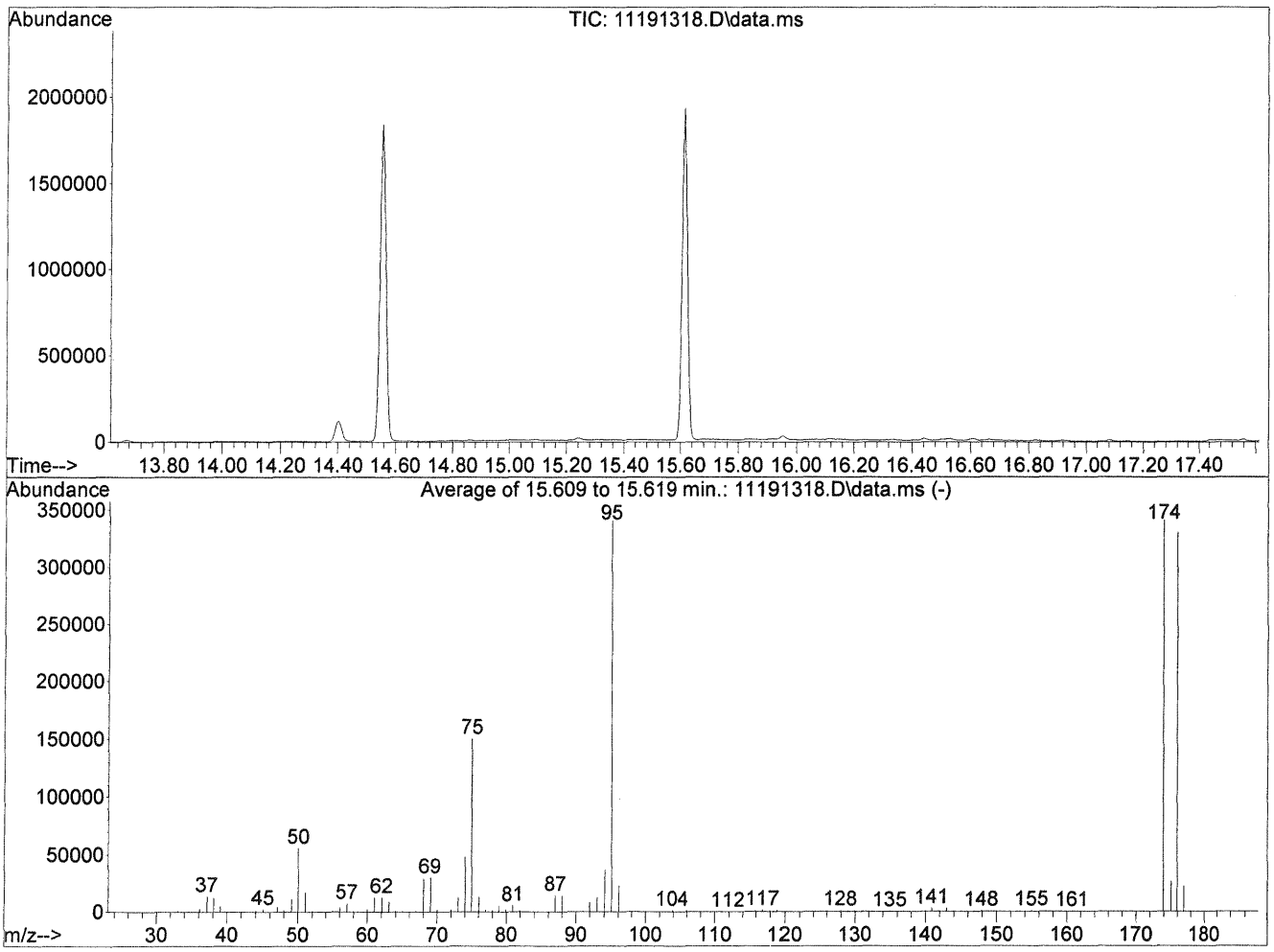
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.4	58304	PASS
75	95	30	66	44.3	157781	PASS
95	95	100	100	100.0	356309	PASS
96	95	5	9	6.7	23701	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	100.0	356331	PASS
175	174	4	9	7.7	27331	PASS
176	174	93	101	98.0	349056	PASS
177	176	5	9	6.6	23045	PASS

CD 11/20/13 11/21/13

Data Path : I:\MS08\Data\2013_11\19\
Data File : 11191318.D
Acq On : 19 Nov 2013 19:29
Operator : EM/CD
Sample : 12.5 TO-15 BFB Std
Misc : S25-11181301
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINTVB.P

Method : I:\MS08\Methods\ACF8111913.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 13:20:08 2013



AutoFind: Scans 2626, 2627, 2628; Background Corrected with Scan 2618

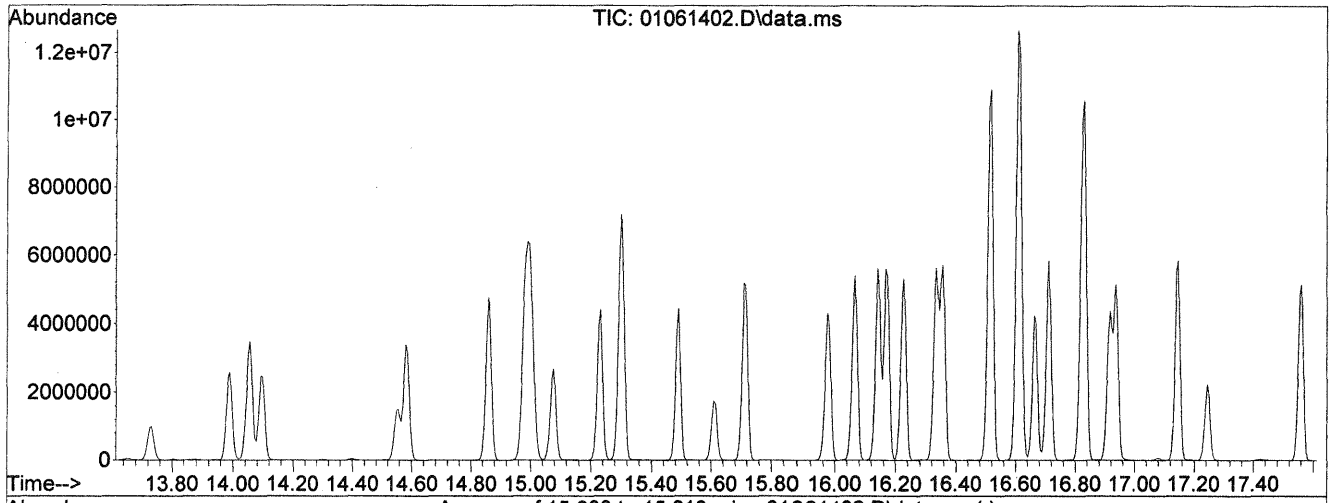
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.4	55747	PASS
75	95	30	66	44.2	150336	PASS
95	95	100	100	100.0	340160	PASS
96	95	5	9	6.6	22603	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	100.1	340501	PASS
175	174	4	9	7.7	26123	PASS
176	174	93	101	96.8	329664	PASS
177	176	5	9	6.6	21896	PASS

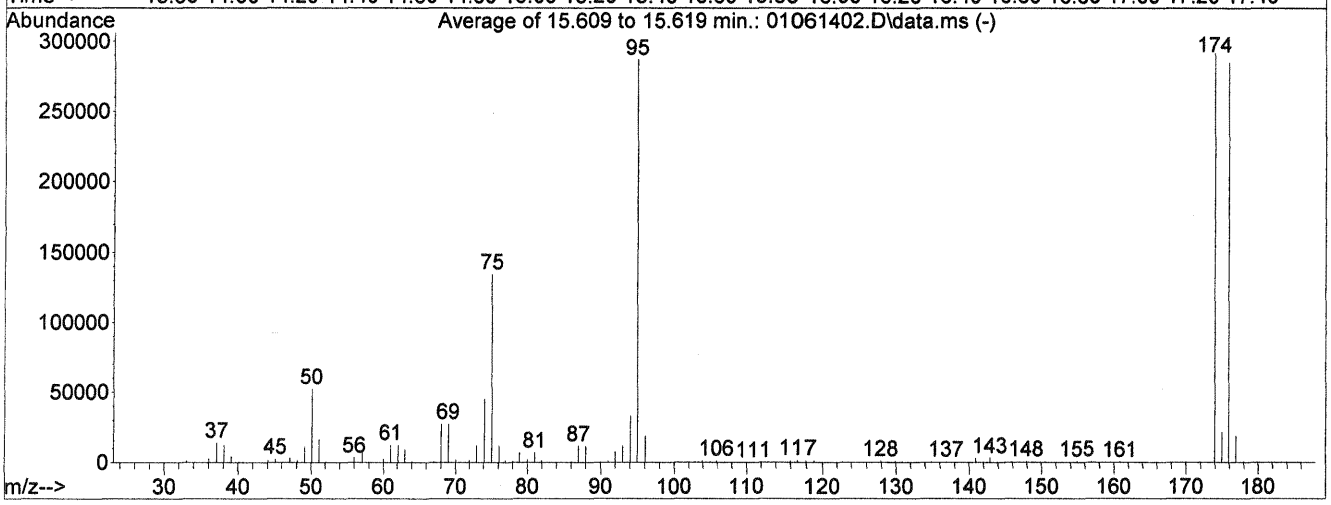
CD 11/20/13 Om 11/21/13

Data Path : I:\MS08\Data\2014_01\06\
Data File : 01061402.D
Acq On : 6 Jan 2014 8:00
Operator : WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Integration File: RTEINT.P

Method : I:\MS08\Methods\R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Nov 20 08:04:51 2013





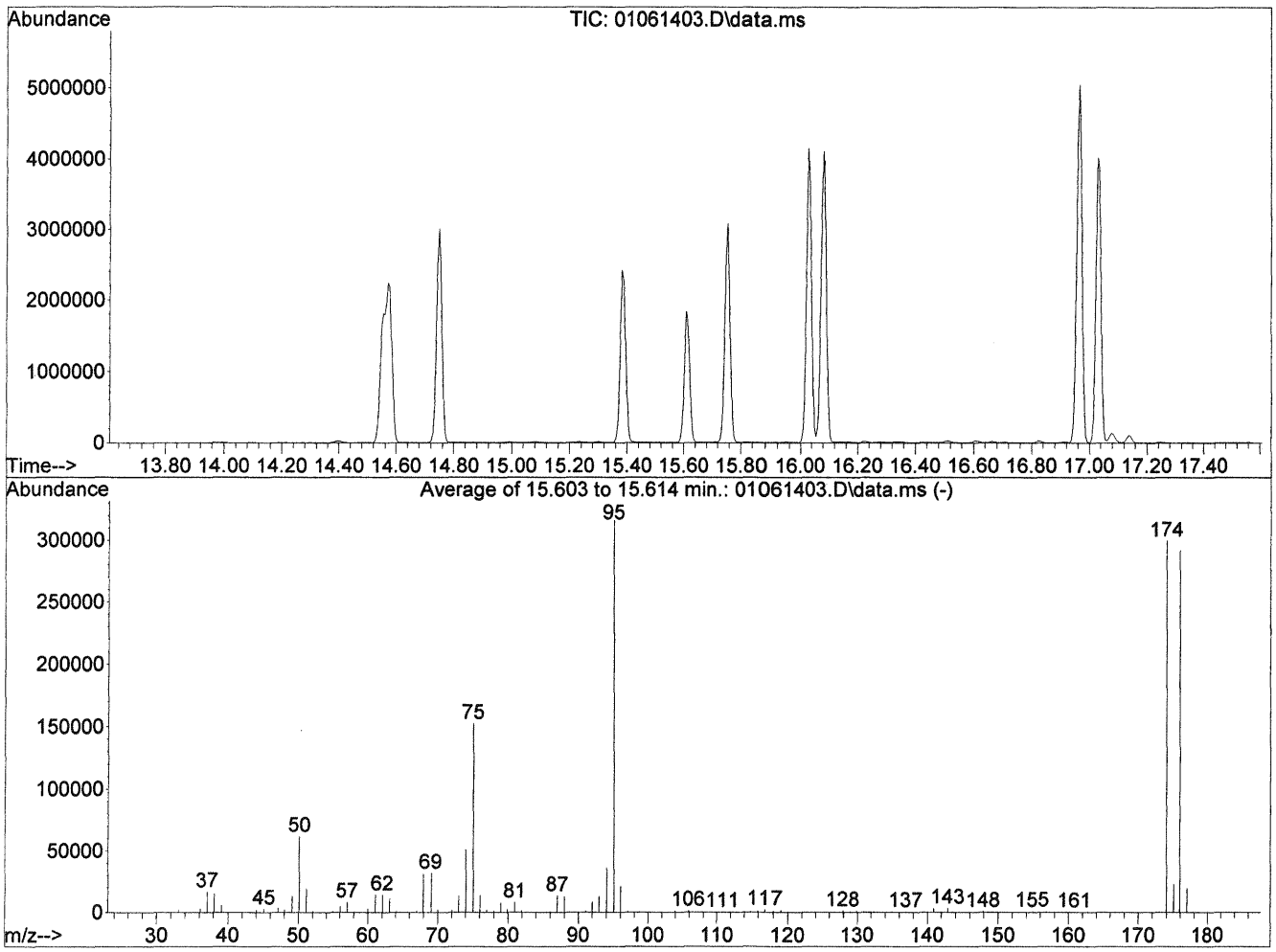
AutoFind: Scans 2626, 2627, 2628; Background Corrected with Scan 2619

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.3	52373	PASS
75	95	30	66	46.9	134565	PASS
95	95	100	100	100.0	286869	PASS
96	95	5	9	6.4	18409	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	101.6	291520	PASS
175	174	4	9	7.4	21472	PASS
176	174	93	101	97.6	284523	PASS
177	176	5	9	6.6	18755	PASS

Data Path : I:\MS08\Data\2014_01\06\
Data File : 01061403.D
Acq On : 6 Jan 2014 8:29
Operator : WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINTVB.P

Method : I:\MS08\Methods\ACF8111913.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 13:26:29 2013



AutoFind: Scans 2625, 2626, 2627; Background Corrected with Scan 2617

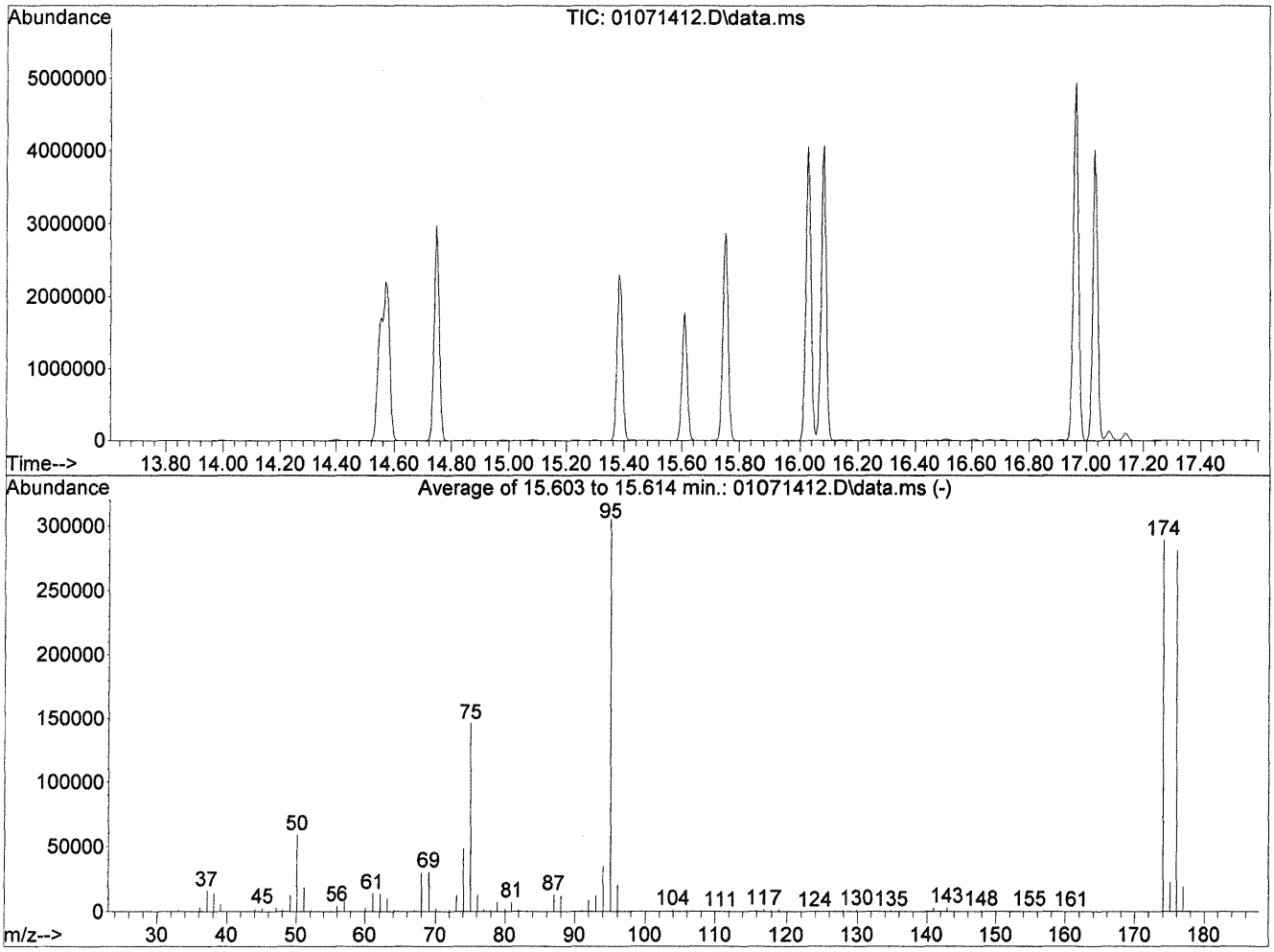
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.5	61808	PASS
75	95	30	66	48.2	152416	PASS
95	95	100	100	100.0	316288	PASS
96	95	5	9	6.7	21333	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	94.7	299563	PASS
175	174	4	9	7.7	22925	PASS
176	174	93	101	97.4	291819	PASS
177	176	5	9	6.7	19635	PASS

 1/6/14

Data Path : I:\MS08\Data\2014_01\07\
Data File : 01071412.D
Acq On : 7 Jan 2014 7:06
Operator : WA
Sample : 25ng TO-15 Custom CCV (125mL)
Misc : S29-12131301/S29-12161304 (1/15)
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINTVB.P

Method : I:\MS08\Methods\ACF8111913.M
Title : TO-15 Tekmar AutoCan/HP 6890/HP 5975 MSD
Last Update : Wed Nov 20 13:26:29 2013



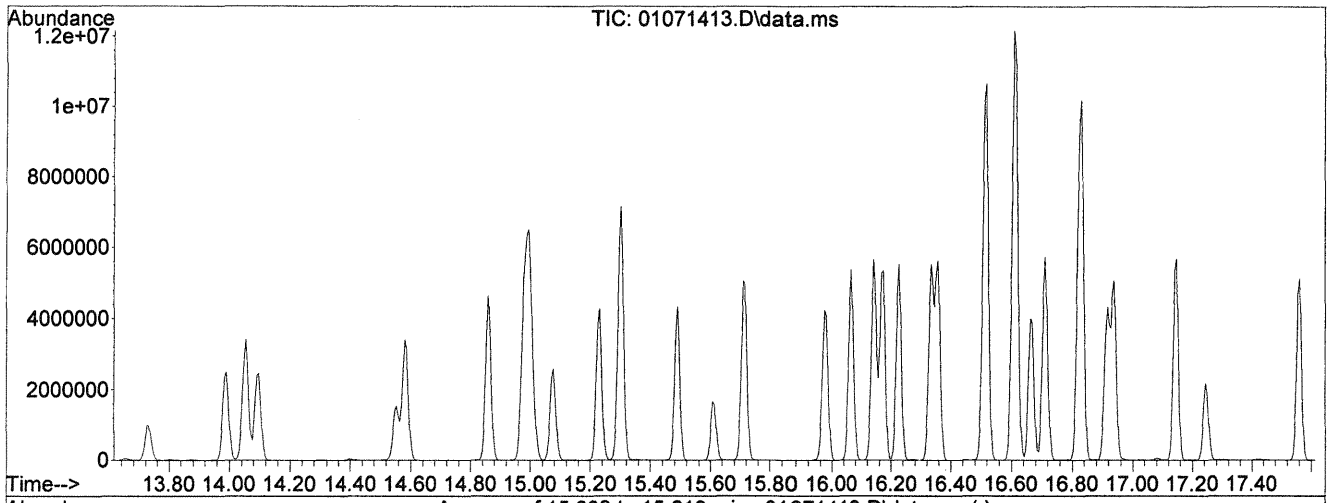
AutoFind: Scans 2625, 2626, 2627; Background Corrected with Scan 2617

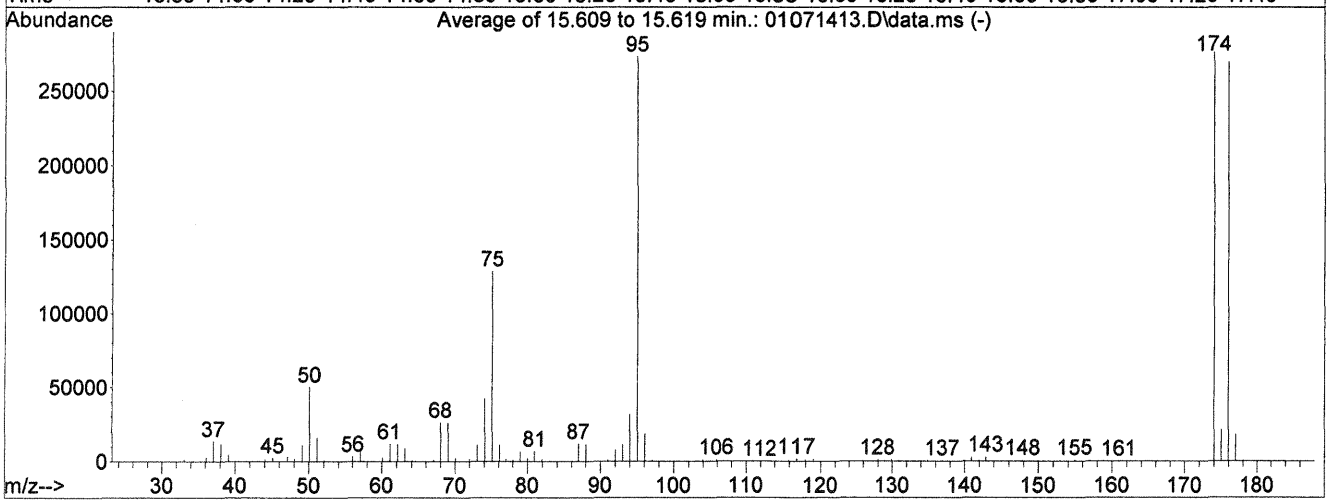
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.3	58880	PASS
75	95	30	66	47.8	146112	PASS
95	95	100	100	100.0	305429	PASS
96	95	5	9	6.7	20333	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	94.7	289131	PASS
175	174	4	9	7.8	22427	PASS
176	174	93	101	97.3	281344	PASS
177	176	5	9	6.7	18943	PASS

Data Path : I:\MS08\Data\2014_01\07\
Data File : 01071413.D
Acq On : 7 Jan 2014 7:35
Operator : WA
Sample : 25ng TO-15 CCV Std(125mL)
Misc : S29-12131301/S29-12111305 (1/9)
ALS Vial : 15 Sample Multiplier: 1

Integration File: RTEINT.P

Method : I:\MS08\Methods\R8111913.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Nov 20 08:04:51 2013





AutoFind: Scans 2626, 2627, 2628; Background Corrected with Scan 2619

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.4	50155	PASS
75	95	30	66	47.1	128544	PASS
95	95	100	100	100.0	273131	PASS
96	95	5	9	6.7	18276	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	101.1	276160	PASS
175	174	4	9	7.5	20685	PASS
176	174	93	101	97.6	269525	PASS
177	176	5	9	6.6	17675	PASS

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
8	11/18/2013 17:50	11181308.D	12.5ng TO-15 BFB Std	S25-11181301	EM/CD	1	*ICAL not used*
9	11/18/2013 18:19	11181309.D	0.40ng Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
10	11/18/2013 18:48	11181310.D	1.0ng Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
11	11/18/2013 19:17	11181311.D	2.5ng Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
12	11/18/2013 19:46	11181312.D	5.0ng Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
13	11/18/2013 20:16	11181313.D	25ng Custom ICAL Std	S25-11181301/S25-10211304 (11/19)	EM/CD	15	
14	11/18/2013 20:45	11181314.D	50ng Custom ICAL Std	S25-11181301/S25-10211304 (11/19)	EM/CD	15	
15	11/18/2013 21:15	11181315.D	100ng Custom ICAL Std	S25-11181301/S25-10211304 (11/19)	EM/CD	15	
16	11/18/2013 21:44	11181316.D	25ng Custom ICV Std (125mL)	S25-11181301/S25-11141301 (12/13)	EM/CD	16	
17	11/18/2013 22:13	11181317.D	25ng Custom ICV Std (125mL)	S25-11181301/S25-11141301 (12/13)	EM/CD	16	

CD 11/20/13

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/19/2013 11:11	11191301.D	blank (100mL)	S25-11181301	EM/CD	1	
2	11/19/2013 11:40	11191302.D	0.2ng STD check (200mL)	S25-11181301/S25-11191301 (12/18)	EM/CD	9	
3	11/19/2013 12:09	11191303.D	2.5ng STD check (125mL)	S25-11181301/S25-11181302 (12/17)	EM/CD	10	
4	11/19/2013 12:39	11191304.D	25ng STD check (125mL)	S25-11181301/S25-11181303 (12/17)	EM/CD	11	
5	11/19/2013 13:08	11191305.D	blank (100mL)	S25-11181301	EM/CD	1	
6	11/19/2013 13:37	11191306.D	12.5ng TO-15 BFB Std	S25-11181301	EM/CD	1	***ICAL saved as***
7	11/19/2013 14:07	11191307.D	0.08ng TO-15 ICAL Std	S25-11181301/S25-11191301 (12/18)	EM/CD	9	***R8111913.M***
8	11/19/2013 14:36	11191308.D	0.1ng TO-15 ICAL Std	S25-11181301/S25-11191301 (12/18)	EM/CD	9	
9	11/19/2013 15:06	11191309.D	0.2ng TO-15 ICAL Std	S25-11181301/S25-11191301 (12/18)	EM/CD	9	
10	11/19/2013 15:35	11191310.D	0.4ng TO-15 ICAL Std	S25-11181301/S25-11191301 (12/18)	EM/CD	9	
11	11/19/2013 16:04	11191311.D	1.0ng TO-15 ICAL Std	S25-11181301/S25-11181302 (12/17)	EM/CD	10	
12	11/19/2013 16:34	11191312.D	5.0ng TO-15 ICAL Std	S25-11181301/S25-11181302 (12/17)	EM/CD	10	
13	11/19/2013 17:03	11191313.D	25ng TO-15 ICAL Std	S25-11181301/S25-11181303 (12/17)	EM/CD	11	
14	11/19/2013 17:32	11191314.D	50ng TO-15 ICAL Std	S25-11181301/S25-11181303 (12/17)	EM/CD	11	
15	11/19/2013 18:01	11191315.D	100ng TO-15 ICAL Std	S25-11181301/S25-11181303 (12/17)	EM/CD	11	
16	11/19/2013 18:30	11191316.D	25ng TO-15 ICV Std (125mL)	S25-11181301/S25-11181305 (12/17)	EM/CD	12	
17	11/19/2013 18:59	11191317.D	25ng TO-15 ICV Std (125mL)	S25-11181301/S25-11181305 (12/17)	EM/CD	12	*CF-not used*
18	11/19/2013 19:29	11191318.D	12.5 TO-15 BFB Std	S25-11181301	EM/CD	1	***ICAL saved as***
19	11/19/2013 19:58	11191319.D	0.4ng TO-15 Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	***ACF8111913.M***
20	11/19/2013 20:27	11191320.D	1.0ng TO-15 Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
21	11/19/2013 20:57	11191321.D	2.5ng TO-15 Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
22	11/19/2013 21:26	11191322.D	5.0ng TO-15 Custom ICAL Std	S25-11181301/S25-10221306 (11/20)	EM/CD	14	
23	11/19/2013 21:55	11191323.D	25ng TO-15 Custom ICAL Std	S25-11181301/S25-11141305 (12/13)	EM/CD	15	
24	11/19/2013 22:25	11191324.D	50ng TO-15 Custom ICAL Std	S25-11181301/S25-11141305 (12/13)	EM/CD	15	
25	11/19/2013 22:54	11191325.D	100ng TO-15 Custom ICAL Std	S25-11181301/S25-11141305 (12/13)	EM/CD	15	
26	11/19/2013 23:24	11191326.D	25ng TO-15 Custom ICV Std (125mL)	S25-11181301/S25-11141301 (12/13)	EM/CD	16	
27	11/19/2013 23:53	11191327.D	25ng TO-15 Custom ICV Std (125mL)	S25-11181301/S25-11141301 (12/13)	EM/CD	16	*CF-not used*

CD 11/20/13

ICAL R8111913.M: Passed for all compounds 0.08ng-100ng; except; Propene, Bromomethane, Acrolein and Benzene 0.2ng-100ng; Methylene Chloride, Allyl Chloride and Hexane 0.4ng-100ng; Isopropanol 0.2ng-200ng; Ethanol 0.4ng-500ng; Acetone and Carbon Disufide 2.0ng-500ng.

ICAL ACF8111913: Passed for all compounds 0.4ng-100ng

CD 11/21/13

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	1/6/2014 7:30	01061401.D	Blank		WA	4	
2	1/6/2014 8:00	01061402.D	25ng TO-15 CCV Std(125mL)	S29-12131301/S29-12111305 (1/9)	WA	15	*Pass*
3	1/6/2014 8:29	01061403.D	25ng TO-15 Custom CCV (125mL)	S29-12131301/S29-12161304 (1/15)	WA	1	*Pass*
4	1/6/2014 8:58	01061404.D	TO-15 Method Blank (1000mL)	S29-12131301	WA	3	*Pass*
5	1/6/2014 9:27	01061405.D	25ng TO-15 LCS Std (125mL)	S29-12131301/S29-12161302 (1/14)	WA	16	*Pass*
6	1/6/2014 9:57	01061406.D	Screen 5669-001 (2.5mL)		WA	4	
7	1/6/2014 10:29	01061407.D	Screen 5669-002 (2.5mL)		WA	4	
8	1/6/2014 10:58	01061408.D	P1305675-001 (25mL)		WA	2	
9	1/6/2014 11:27	01061409.D	P1305675-003 (25mL)		WA	5	
10	1/6/2014 12:04	01061410.D	P1305669-002 (1.5mL)		WA	4	
11	1/6/2014 12:33	01061411.D	P1305669-001 (1000mL)		WA	14	
12	1/6/2014 13:02	01061412.D	P1305675-001 dil (15mL)		WA	2	
13	1/6/2014 13:30	01061413.D	P1305669-002 (1.0mL)		WA	4	
14	1/6/2014 13:59	01061414.D	P1305649-001 (3.0mL)		WA	4	
15	1/6/2014 14:28	01061415.D	P1305649-003 (3.0mL)		WA	4	
16	1/6/2014 14:58	01061416.D	P1305649-002 (7.5mL)		WA	4	
17	1/6/2014 15:39	01061417.D	P1305666-001 (400mL)	PF2	WA	14	
18	1/6/2014 16:38	01061418.D	P1305630-006 (25mL)	PF2	WA	14	*CF*
19	1/6/2014 17:07	01061419.D	P1305630-006 dil (2.5mL)		WA	4	*CF*
20	1/6/2014 17:36	01061420.D	25ng TO-15 Custom LCS Std (125mL)	S29-12131301/S29-12161309 (1/15)	WA	2	*Pass*
21	1/6/2014 18:05	01061421.D	P1305675-002 (1000mL)		WA	3	
22	1/6/2014 18:34	01061422.D	P1305675-003 (25mL)		WA	5	*CF-rerun*
23	1/6/2014 19:03	01061423.D	P1305675-004 (70mL)		WA	6	
24	1/6/2014 19:33	01061424.D	P1305675-004 dup (70mL)		WA	6	*Pass as dup*
25	1/6/2014 20:02	01061425.D	P1305675-005 (70mL)		WA	7	
26	1/6/2014 20:31	01061426.D	P1305675-006 (100mL)		WA	8	
27	1/6/2014 21:00	01061427.D	P1305675-007 (15mL)		WA	9	
28	1/6/2014 21:30	01061428.D	25ng TO-15 LCSD Std (125mL)	S29-12131301/S29-12161302 (1/14)	WA	16	*Pass*
29	1/6/2014 21:59	01061429.D	STD Check	S29-12131301/S29-01031403 (2/1)	WA	15	*empty can*

SM 1/7/14

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
12	1/7/2014 7:06	01071412.D	25ng TO-15 Custom CCV (125mL)	S29-12131301/S29-12161304 (1/15)	WA	1	*Pass*
13	1/7/2014 7:35	01071413.D	25ng TO-15 CCV Std(125mL)	S29-12131301/S29-12111305 (1/9)	WA	15	*Pass*
14	1/7/2014 8:04	01071414.D	TO-15 Method Blank (1000mL)	S29-12131301	WA	4	*Pass*
15	1/7/2014 8:33	01071415.D	25ng TO-15 LCS Std (125mL)	S29-12131301/S29-12161302 (1/14)	WA	16	*Pass*
16	1/7/2014 9:02	01071416.D	25ng TO-15 LCSD Std (125mL)	S29-12131301/S29-12161302 (1/14)	WA	16	*Pass*
17	1/7/2014 10:01	01071417.D	Screen 5675-3 (100mL)		WA	5	
18	1/7/2014 11:02	01071418.D	Screen 5630-006 (3.0mL)	PF2	WA	4	
19	1/7/2014 11:32	01071419.D	P1305675-003 (1000mL)		WA	5	
20	1/7/2014 12:12	01071420.D	P1305725-001 (1000mL)		WA	10	
21	1/7/2014 12:41	01071421.D	P1305725-002 (1000mL)		WA	11	
22	1/7/2014 13:10	01071422.D	P1305727-001 (1000mL)		WA	12	
23	1/7/2014 13:39	01071423.D	P1305727-002 (1000mL)		WA	13	
24	1/7/2014 14:08	01071424.D	P1305630-006 dil (15mL)	PF2	WA	2	
25	1/7/2014 14:49	01071425.D	P1305630-006 (50mL)	PF2	WA	2	
26	1/7/2014 15:18	01071426.D	P1305630-006 dup (50mL)	PF2	WA	2	
27	1/7/2014 16:14	01071427.D	Conf. 5678-006 (1000mL)		WA	3	
28	1/7/2014 16:44	01071428.D	Conf. 5635-002 (70mL)		WA	3	
29	1/7/2014 17:20	01071429.D	Blank		WA	2	
30	1/7/2014 17:50	01071430.D	Conf 5678-005 (1000mL)		WA	3	
31	1/7/2014 18:19	01071431.D	P1400026-005 (100mL)		WA	2	
32	1/7/2014 18:47	01071432.D	P1305762-001 (1000mL)		WA	5	
33	1/7/2014 19:17	01071433.D	P1305762-002 (1000mL)		WA	6	
34	1/7/2014 19:46	01071434.D	P1305762-003 (1000mL)		WA	7	
35	1/7/2014 20:15	01071435.D	P1305762-004 (1000mL)		WA	8	
36	1/7/2014 20:45	01071436.D	P1305735-006 (1000mL)		WA	9	
37	1/7/2014 21:14	01071437.D	P1305735-007 (1000mL)		WA	10	
38	1/7/2014 21:43	01071438.D	P1305735-008 (1000mL)		WA	11	
39	1/7/2014 22:12	01071439.D	P1305735-009 (1000mL)		WA	12	
40	1/7/2014 22:41	01071440.D	P1305735-010 (1000mL)		WA	13	
41	1/7/2014 23:10	01071441.D	P1305735-011 (1000mL)		WA	14	
42	1/7/2014 23:39	01071442.D	25ng TO-15 LCS Custom (125mL)	S29-12131301/S29-12161309 (1/15)	WA	1	*Pass*
43	1/8/2014 0:09	01071443.D	System	S29-12131301/S29-01031403 (2/1)	WA	15	

DM 1/8/14

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

January 30, 2014

SUBJECT: Treasure Island, IR Sites 6 & 12, Data Validation

Dear Mrs. Bjorkman,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 16, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31173:

SDG #	Fraction
13L065A & 13L099	Volatiles, Total Petroleum Hydrocarbons as Gasoline, Total Petroleum Hydrocarbons as Extractables, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under EPA Level III & IV validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, CLPNFG, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

ADR/IV

LDC #31173 (Trevet/Accord-San Diego / Treasure Island, IR Sites 6 & 12)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		TPH-G (8015M)		TPH-E 8015M		Methane Ethane Ethene		Alk (2320B)		Cl,SO_4 (300.0)		NO_3-N (4500)		S= (4500)																									
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	13L065A	01/16/14	02/06/14	2	0	2	0	1	0	2	0	1	0	1	0	-	-	1	0																								
A	13L065A	01/16/14	02/06/14	1	0	1	0	1	0	2	0	1	0	1	0	-	-	1	0																								
B	13L099	01/16/14	02/06/14	-	-	-	-	-	-	-	-	-	-	-	-	2	0	-	-																								
Total	A/AK			3	0	3	0	2	0	4	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20

Shaded cells indicate Level IV validation (all other cells are Level III validation) These sample counts do not include MS/MSD and DUPs

Data Validation Report
Treasure Island, IR Sites 6 & 12

SDGs: 13L065A, 13L099

Prepared for

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave. West, Suite 220
Carlsbad, California 92010

January 29, 2014

INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the December 2013 sampling period. Data validation was performed in accordance with US EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (CLPNFG) (June 2008) and US EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (CLPNFG) (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Total Petroleum Hydrocarbons (TPH) as Gasoline by EPA SW 846 Method 8015M
TPH as Extractables by EPA SW 846 Method 8015M
Dissolved Gases by Method RSK-175

Wet Chemistry:
Alkalinity by Standard Method 2320B
Chloride and Sulfate by EPA Method 300.0
Nitrate as Nitrogen by Standard Method 4500-NO3
Sulfide by Standard Method 4500-S2D

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment II. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks and trip blanks. Approximately 33 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment I, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, ICB/CCBs and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method blanks or initial, continuing, and preparation blanks

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) were within QC limits with the exception of one MS/MSD pair for VOCs and dissolved gases. The associated sample results were qualified as non-detected estimated (UJ). In instances where sample concentrations were significantly greater than the spike amount or %Rs were out high and the associated sample results were non-detect, no data were qualified. The details regarding the qualification of data are provided in Enclosure I.

VII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the exception of one LCS/LCSD pair for VOCs. No data were qualified due to high %Rs since the associated results were non-detected.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDGs 13L065A and 13L099	All compounds reported as detected below the LOQ.	J (all detects)	A

In instances where data was reported above the calibration range and subsequently diluted, data was qualified as unusable by the validators in order to yield only one complete set of data for a given sample.

XI. Field Duplicate Samples

No field duplicates were identified in this SDG.

XII. Field Blank Samples

Two trip blanks were collected and analyzed for VOCs and TPH as gasoline. No contaminants were found in the trip blanks.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Dec-2013	121013-TB02	L065-07	TB	5030B	8260B	3
10-Dec-2013	121013-TB03	L065-08	TB	5030B	8015B GRO	3
10-Dec-2013	06-MW26-121013	L065-09	N	3520C	8015B DRO	3
10-Dec-2013	06-MW26-121013	L065-09	N	3520C	RSK-175	3
10-Dec-2013	06-MW26-121013	L065-09	N	5030B	8015B GRO	3
10-Dec-2013	06-MW26-121013	L065-09	N	GEN PREP	SM 2320B	3
10-Dec-2013	06-MW26-121013	L065-09	N	GEN PREP	SM4500-S2D	3
10-Dec-2013	06-MW26-121013DUP	L065-09D	DUP	GEN PREP	SM 2320B	3
10-Dec-2013	06-MW26-121013DUP	L065-09D	DUP	GEN PREP	SM4500-S2D	3
10-Dec-2013	06-MW26-121013	L065-09I	N	3520C	RSK-175	3
10-Dec-2013	06-MW26-121013	L065-09I	N	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013DUP	L065-09ID	DUP	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013MS	L065-09IM	MS	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013MSD	L065-09IS	MSD	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013	L065-09J	N	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013DUP	L065-09JD	DUP	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013MS	L065-09JM	MS	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013MSD	L065-09JS	MSD	GEN PREP	300.0	3
10-Dec-2013	06-MW26-121013MS	L065-09M	MS	3520C	8015B DRO	3
10-Dec-2013	06-MW26-121013MS	L065-09M	MS	3520C	RSK-175	3
10-Dec-2013	06-MW26-121013MS	L065-09M	MS	5030B	8015B GRO	3
10-Dec-2013	06-MW26-121013MS	L065-09M	MS	5030B	8260B	3
10-Dec-2013	06-MW26-121013MS	L065-09M	MS	GEN PREP	SM4500-S2D	3
10-Dec-2013	06-MW26-121013	L065-09N	N	5030B	8260B	3
10-Dec-2013	06-MW26-121013MSD	L065-09S	MSD	3520C	8015B DRO	3
10-Dec-2013	06-MW26-121013MSD	L065-09S	MSD	3520C	RSK-175	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Dec-2013	06-MW26-121013MSD	L065-09S	MSD	5030B	8015B GRO	3
10-Dec-2013	06-MW26-121013MSD	L065-09S	MSD	5030B	8260B	3
10-Dec-2013	06-MW26-121013MSD	L065-09S	MSD	GEN PREP	SM4500-S2D	3
10-Dec-2013	06-MW25-121013	L065-10	N	3520C	8015B DRO	4
10-Dec-2013	06-MW25-121013	L065-10	N	3520C	RSK-175	4
10-Dec-2013	06-MW25-121013	L065-10	N	5030B	8015B GRO	4
10-Dec-2013	06-MW25-121013	L065-10	N	5030B	8260B	4
10-Dec-2013	06-MW25-121013	L065-10	N	GEN PREP	SM 2320B	4
10-Dec-2013	06-MW25-121013	L065-10	N	GEN PREP	SM4500-S2D	4
10-Dec-2013	06-MW25-121013	L065-10I	N	3520C	RSK-175	4
10-Dec-2013	06-MW25-121013	L065-10I	N	GEN PREP	300.0	4
13-Dec-2013	06-MW26-121313	L099-01	N	GEN PREP	SM4500NO3	3
13-Dec-2013	06-MW26-121313DUP	L099-01D	DUP	GEN PREP	SM4500NO3	3
13-Dec-2013	06-MW26-121313MS	L099-01M	MS	GEN PREP	SM4500NO3	3
13-Dec-2013	06-MW25-121313	L099-02	N	GEN PREP	SM4500NO3	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 13L065A, 13L099 **Laboratory: EMXT**

EDD Filename: 13L065A, 13L099 **eQAPP Name: TRV0807_011714**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: **13L065A**

Sample ID: **06-MW25-121013** ***Collected:*** **12/10/2013 11:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ISOPROPYLBENZENE	0.88	J	0.20	LOD	1.0	LOQ	UG/L	J	RI

Sample ID: **06-MW26-121013** ***Collected:*** **12/10/2013 9:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.11	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
CIS-1,2-DICHLOROETHENE	0.11	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.14	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Method Category: **VOA**

Method: **RSK-175** ***Matrix:*** **AQ**

SDG: **13L065A**

Sample ID: **06-MW26-121013** ***Collected:*** **12/10/2013 9:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	5.0	U	0.60	LOD	5.0	LOQ	UG/L	UJ	Ms

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR SITES 6 AND 12

Data Qualifier Summary

Lab Reporting Batch ID: 13L065A, 13L099 **Laboratory: EMXT**

EDD Filename: 13L065A, 13L099 **eQAPP Name: TRV0807_011714**

Reason Code Legend

Reason Code	*Description*
Lcs	Laboratory Control Spike Upper Estimation
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR SITES 6 AND 12

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

13L065A

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13L065A **Laboratory: EMXT**

EDD Filename: 13L065A **eQAPP Name: TRV0807_011714**

Method: RSK-175
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
06-MW26 -121013MS 06-MW26 -121013MSD (06-MW26 -121013)	ETHENE METHANE	- 16	79 17	80.00-120.00 80.00-120.00	- -	ETHENE METHANE	J (all detects) UJ (all non-detects) Methane, No Qual, >4x

Method: 8260B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
06-MW26 -121013MSD (06-MW26 -121013)	BROMODICHLOROMETHANE	-	123	75.00-120.00	-	BROMODICHLOROMETHANE	J(all detects)

Project Name and Number: N62473-08-C-9002 - TREASURE ISLAND IR SITES 6 AND 12

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13L065A **Laboratory: EMXT**

EDD Filename: 13L065A **eQAPP Name: TRV0807_011714**

Method: **8260B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
VO67L10C (121013-TB02)	CHLOROMETHANE	127	132	40.00-125.00	-	CHLOROMETHANE	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 13L065A **Laboratory: EMXT**

EDD Filename: 13L065A **eQAPP Name: TRV0807_011714**

Method: **8260B**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
06-MW25-121013	ISOPROPYLBENZENE	J	0.88	1.0	LOQ	UG/L	J (all detects)
06-MW26-121013	CARBON DISULFIDE	J	0.11	0.50	LOQ	UG/L	J (all detects)
	CIS-1,2-DICHLOROETHENE	J	0.11	0.50	LOQ	UG/L	
	TRICHLOROETHENE	J	0.14	0.50	LOQ	UG/L	

Quality Control Outlier Reports

13L099

(No Outliers)

LDC #: 31173B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/14
SDG #: 13L099 ADR/~~IV~~ Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Nitrate-N (SM4500-NO3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/13/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation.
VI.	Duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation.
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	06-MW26-121313	11	MB	21		31	
2	06-MW25-121313	12		22		32	
3	06-MW26-121313MS	13		23		33	
4	06-MW26-121313DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065A

Sample Identification

06-MW25-121013

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 121013-TB02 was identified as a trip blank. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since there were no associated samples, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065A	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Volatiles - Data Qualification Summary - SDG 13L065A

SDG	Sample	Compound	Flag	A or P	Reason
13L065A	06-MW25-121013	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Volatiles - Field Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	December 10, 2013
LDC Report Date:	January 27, 2014
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065A

Sample Identification

06-MW25-121013

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, and Standard Method 4500-S2D for Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the LOQ and above the DL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13L065A	All analytes reported below the LOQ and above the DL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Data Qualification Summary - SDG 13L065A

SDG	Sample	Analyte	Flag	A or P	Reason
13L148	06-MW25-121013	All analytes reported below the LOQ and above the DL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Gasoline
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065A

Sample Identification

06-MW25-121013

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

Sample 121013-TB03 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065A	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable for samples.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 13L065A

SDG	Sample	Compound	Flag	A or P	Reason
13L065A	06-MW25-121013	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065A

Sample Identification

06-MW25-121013

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015M for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065A	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 13L065A

SDG	Sample	Compound	Flag	A or P	Reason
13L065A	06-MW25-121013	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 6 & 12
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065A

Sample Identification

06-MW25-121013
06-MW25-121013DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since there were no associated samples, no data were qualified.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
06-MW25-121013	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065A	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
06-MW25-121013	Methane	X	A
06-MW25-121013DL	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13L065A

SDG	Sample	Compound	Flag	A or P	Reason
13L065A	06-MW25-121013	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13L065A	06-MW25-121013 06-MW25-121013DL	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation
13L065A	06-MW25-121013	Methane	X	A	Overall assessment of data
13L065A	06-MW25-121013DL	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 6 & 12
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13L065A

No Sample Data Qualified in this SDG

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

January 30, 2014

SUBJECT: Treasure Island, IR Sites 21 & 24, Data Validation

Dear Mrs. Bjorkman,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 16, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31175:

SDG #	Fraction
13L065, 13L101 13L102, 13L103	Volatiles, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under EPA Level III & IV validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, CLPNFG, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, CLPNFG, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

ADR/IV

LDC #31175 (Trevet/Accord-San Diego / Treasure Island, IR Sites 21 & 24)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Methane Ethane Ethene		Alk (2320B)		SO_4 (300.0)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	13L065	01/16/14	02/06/14	5	0	7	0	-	-	-	-																														
A	13L065	01/16/14	02/06/14	1	0	2	0	-	-	-	-																														
B	13L101	01/16/14	02/06/14	14	0	11	0	7	0	7	0																														
B	13L101	01/16/14	02/06/14	3	0	3	0	1	0	1	0																														
C	13L102	01/16/14	02/06/14	12	0	14	0	7	0	7	0																														
C	13L102	01/16/14	02/06/14	3	0	-	-	-	-	-	-																														
D	13L103	01/16/14	02/06/14	13	0	8	0	4	0	4	0																														
D	13L103	01/16/14	02/06/14	4	0	2	0	1	0	1	0																														
Total	A/AK			55	0	47	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142

Shaded cells indicate Level IV validation (all other cells are Level III validation) These sample counts do not include MS/MSD and DUPs

Data Validation Report
Treasure Island, IR Sites 21 & 24

SDGs: 13L065, 13L101, 13L102, 13L03

Prepared for

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave. West, Suite 220
Carlsbad, California 92010

January 30, 2014

INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the December 2013 sampling period. Data validation was performed in accordance with US EPA *Contract Laboratory Program National Functional Guidelines* (CLPNFG) *for Superfund Organic Methods Data Review* (June 2008) and US EPA CLPNFG *for Inorganic Superfund Data Review* (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260B
Dissolved Gases by Method RSK-175

Wet Chemistry:
Alkalinity by Standard Method 2320B
Sulfate by EPA Method 300.0

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), surrogates, internal standards, matrix spike/matrix spike duplicates (MS/MSD), laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, trip blanks, equipment rinsates, source blanks and field duplicates. Approximately 20 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment 1, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, ICB/CCBs and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method blanks or initial, continuing, and preparation blanks

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed at the required frequency. Percent recoveries (%R) were within QC limits with the exception of two MS/MSD pairs for dissolved gases. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. In instances where sample concentrations were significantly greater than the spike amount, no data were qualified. The details regarding the qualification of data are provided in Enclosure I.

VII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDGs 13L065, 13L101, 13L102 and 13L103	All compounds reported as detected below the LOQ.	J (all detects)	A

In instances where data was reported above the calibration range and subsequently diluted, data was qualified as unusable by the validators in order to yield only one complete set of data for a given sample.

XI. Field Duplicate Samples

Five field duplicate pairs were collected and analyzed for VOCs, dissolved gases, alkalinity and sulfate. No data was qualified on the basis of field duplicate RPDs outside the QC limits. The field duplicate result comparisons are provided in Enclosure I.

XII. Field Blank Samples

Three trip blanks were collected and analyzed for VOCs. No contaminants were found in the trip blanks.

Three equipment rinsates were collected and analyzed for VOCs, dissolved gases, alkalinity and sulfate. Several equipment blanks had detections for dissolved gases and sulfate. The associated sample results were qualified as non-detected (U) due to equipment rinsate contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment rinsates were not qualified. The equipment rinsate outlier reports are presented in Enclosure I.

One source blank was collected and analyzed for VOCs, dissolved gases, alkalinity and sulfate. The source blank had detections for dissolved gases and sulfate. The associated sample results were qualified as non-detected (U) due to source blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the source blanks were not qualified. The source blank outlier reports are presented in Enclosure I.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Dec-2013	121013-TB-01	L065-01	TB	5030B	8260B	3
10-Dec-2013	21-MW09A-121013	L065-02	N	5030B	8260B	4
10-Dec-2013	21-MW09A-121013	L065-02	N	GEN PREP	RSK-175	4
10-Dec-2013	21-MW09A-121013	L065-02I	N	GEN PREP	RSK-175	4
10-Dec-2013	21-IP07-121013	L065-03	N	5030B	8260B	3
10-Dec-2013	21-IP07-121013	L065-03I	N	GEN PREP	RSK-175	3
10-Dec-2013	21-IP07-121013	L065-03J	N	GEN PREP	RSK-175	3
10-Dec-2013	21-IP07-121013-D	L065-04	FD	5030B	8260B	3
10-Dec-2013	21-IP07-121013-D	L065-04I	FD	GEN PREP	RSK-175	3
10-Dec-2013	21-IP07-121013-D	L065-04J	FD	GEN PREP	RSK-175	3
10-Dec-2013	21-MW02A-121013	L065-05	N	5030B	8260B	3
10-Dec-2013	21-MW02A-121013	L065-05	N	GEN PREP	RSK-175	3
10-Dec-2013	21-MW02A-121013	L065-05I	N	GEN PREP	RSK-175	3
10-Dec-2013	21-MW02A-121013MS	L065-05M	MS	5030B	8260B	3
10-Dec-2013	21-MW02A-121013MS	L065-05M	MS	GEN PREP	RSK-175	3
10-Dec-2013	21-MW02A-121013MSD	L065-05S	MSD	5030B	8260B	3
10-Dec-2013	21-MW02A-121013MSD	L065-05S	MSD	GEN PREP	RSK-175	3
10-Dec-2013	121013-ER-01	L065-06	ER	5030B	8260B	3
10-Dec-2013	121013-ER-01	L065-06	ER	GEN PREP	RSK-175	3
11-Dec-2013	121113-TB-01	L101-11	TB	5030B	8260B	3
11-Dec-2013	24-EW30-121113	L101-12	N	5030B	8260B	3
11-Dec-2013	24-EW30-121113MS	L101-12M	MS	5030B	8260B	3
11-Dec-2013	24-EW30-121113MSD	L101-12S	MSD	5030B	8260B	3
11-Dec-2013	24-TW-37-121113	L103-01	N	5030B	8260B	4
11-Dec-2013	24-EW29-121113	L102-10	N	5030B	8260B	3
11-Dec-2013	24-EW29-121113	L102-10	N	GEN PREP	RSK-175	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
11-Dec-2013	24-EW29-121113	L102-10	N	NONE	300.0	3
11-Dec-2013	24-EW29-121113	L102-10	N	NONE	SM 2320B	3
11-Dec-2013	24-EW29-121113DUP	L102-10D	DUP	NONE	300.0	3
11-Dec-2013	24-EW29-121113DUP	L102-10D	DUP	NONE	SM 2320B	3
11-Dec-2013	24-EW29-121113	L102-10I	N	GEN PREP	RSK-175	3
11-Dec-2013	24-EW29-121113MS	L102-10M	MS	5030B	8260B	3
11-Dec-2013	24-EW29-121113MS	L102-10M	MS	GEN PREP	RSK-175	3
11-Dec-2013	24-EW29-121113MS	L102-10M	MS	NONE	300.0	3
11-Dec-2013	24-EW29-121113MSD	L102-10S	MSD	5030B	8260B	3
11-Dec-2013	24-EW29-121113MSD	L102-10S	MSD	GEN PREP	RSK-175	3
11-Dec-2013	24-IW21-121113	L101-13	N	GEN PREP	RSK-175	4
11-Dec-2013	24-IW21-121113	L101-13	N	NONE	300.0	4
11-Dec-2013	24-IW21-121113	L101-13	N	NONE	SM 2320B	4
11-Dec-2013	24-IW21-121113	L101-13I	N	GEN PREP	RSK-175	4
11-Dec-2013	24-IW21-121113	L101-13J	N	GEN PREP	RSK-175	4
11-Dec-2013	24-IW21-121113	L101-13N	N	5030B	8260B	4
11-Dec-2013	24-EW4-121113	L103-02	N	5030B	8260B	4
11-Dec-2013	24-EW6-121113	L102-11	N	5030B	8260B	3
11-Dec-2013	24-EW6-121113	L102-11	N	GEN PREP	RSK-175	3
11-Dec-2013	24-EW6-121113	L102-11	N	NONE	300.0	3
11-Dec-2013	24-EW6-121113	L102-11	N	NONE	SM 2320B	3
11-Dec-2013	24-EW6-121113	L102-11I	N	GEN PREP	RSK-175	3
11-Dec-2013	24-EW6-121113	L102-11J	N	GEN PREP	RSK-175	3
11-Dec-2013	24-EW16-121113	L101-14	N	5030B	8260B	4
11-Dec-2013	24-TW-50-121113	L103-03	N	5030B	8260B	3
11-Dec-2013	24-IW8-121113	L102-12	N	5030B	8260B	3

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
11-Dec-2013	24-IW8-121113	L102-12	N	GEN PREP	RSK-175	3
11-Dec-2013	24-IW8-121113	L102-12	N	NONE	300.0	3
11-Dec-2013	24-IW8-121113	L102-12	N	NONE	SM 2320B	3
11-Dec-2013	24-IW8-121113	L102-12I	N	GEN PREP	RSK-175	3
11-Dec-2013	24-TW-25-121113	L102-13	N	5030B	8260B	3
11-Dec-2013	24-TW-26-121113	L103-04	N	5030B	8260B	3
11-Dec-2013	24-EW31-121113	L102-14	N	5030B	8260B	4
11-Dec-2013	24-TW-43-121113	L103-05	N	5030B	8260B	3
11-Dec-2013	24-BB76-121113	L101-15	N	5030B	8260B	3
11-Dec-2013	24-BB76-121113	L101-15	N	GEN PREP	RSK-175	3
11-Dec-2013	24-BB76-121113	L101-15	N	NONE	300.0	3
11-Dec-2013	24-BB76-121113	L101-15	N	NONE	SM 2320B	3
11-Dec-2013	24-BB76-121113	L101-15I	N	GEN PREP	RSK-175	3
11-Dec-2013	24-TW-36-121113	L103-06	N	5030B	8260B	3
11-Dec-2013	24-TW-42-121113	L102-15	N	5030B	8260B	4
11-Dec-2013	121113-SB-01	L101-16	SB	5030B	8260B	3
11-Dec-2013	121113-SB-01	L101-16	SB	GEN PREP	RSK-175	3
11-Dec-2013	121113-SB-01	L101-16	SB	NONE	300.0	3
11-Dec-2013	121113-SB-01	L101-16	SB	NONE	SM 2320B	3
11-Dec-2013	121113-ER-01	L101-17	ER	5030B	8260B	3
11-Dec-2013	121113-ER-01	L101-17	ER	GEN PREP	RSK-175	3
11-Dec-2013	121113-ER-01	L101-17	ER	NONE	300.0	3
11-Dec-2013	121113-ER-01	L101-17	ER	NONE	SM 2320B	3
12-Dec-2013	24-BB89-121213	L101-18	N	5030B	8260B	3
12-Dec-2013	24-EW28-121213	L103-07	N	5030B	8260B	3
12-Dec-2013	24-TW-27-121213	L101-01	N	5030B	8260B	4

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Dec-2013	24-EW32-121213	L101-02	N	5030B	8260B	3
12-Dec-2013	24-EW32-121213	L101-02	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW32-121213	L101-02	N	NONE	300.0	3
12-Dec-2013	24-EW32-121213	L101-02	N	NONE	SM 2320B	3
12-Dec-2013	24-EW32-121213	L101-02I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW32-121213	L101-02J	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-28-121213	L103-08	N	5030B	8260B	3
12-Dec-2013	24-TW-28-121213	L103-08	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-28-121213	L103-08	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-28-121213	L103-08I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-28-121213	L103-08I	N	NONE	300.0	3
12-Dec-2013	24-EW33-121213	L101-03	N	5030B	8260B	3
12-Dec-2013	24-TW-49-121213	L103-09	N	5030B	8260B	3
12-Dec-2013	24-EW34-121213	L101-04	N	5030B	8260B	3
12-Dec-2013	24-TW-14-121213	L102-01	N	5030B	8260B	3
12-Dec-2013	24-TW-14-121213	L102-01	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-14-121213	L102-01	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-14-121213	L102-01I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-14-121213	L102-01I	N	NONE	300.0	3
12-Dec-2013	24-TW-14-121213-D	L102-02	FD	5030B	8260B	3
12-Dec-2013	24-TW-14-121213-D	L102-02	FD	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-14-121213-D	L102-02	FD	NONE	SM 2320B	3
12-Dec-2013	24-TW-14-121213-D	L102-02I	FD	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-14-121213-D	L102-02I	FD	NONE	300.0	3
12-Dec-2013	24-TW-53-121213	L101-05	N	5030B	8260B	3
12-Dec-2013	24-BB80-121213	L102-03	N	5030B	8260B	4

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Dec-2013	24-EW12-121213	L103-10	N	5030B	8260B	3
12-Dec-2013	24-EW12-121213	L103-10	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW12-121213	L103-10	N	NONE	SM 2320B	3
12-Dec-2013	24-EW12-121213	L103-10I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW12-121213	L103-10I	N	NONE	300.0	3
12-Dec-2013	24-EW12-121213	L103-10J	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-41-121213	L101-06	N	5030B	8260B	3
12-Dec-2013	24-TW-41-121213	L101-06	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-41-121213	L101-06	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-41-121213	L101-06I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-41-121213	L101-06I	N	NONE	300.0	3
12-Dec-2013	24-BB63-121213	L102-04	N	5030B	8260B	3
12-Dec-2013	24-TW-48-121213	L103-11	N	5030B	8260B	4
12-Dec-2013	24-TW-48-121213	L103-11	N	NONE	SM 2320B	4
12-Dec-2013	24-TW-48-121213	L103-11I	N	5030B	8260B	4
12-Dec-2013	24-TW-48-121213	L103-11I	N	GEN PREP	RSK-175	4
12-Dec-2013	24-TW-48-121213	L103-11I	N	NONE	300.0	4
12-Dec-2013	24-TW-48-121213	L103-11J	N	GEN PREP	RSK-175	4
12-Dec-2013	24-IW5-121213	L101-07	N	5030B	8260B	4
12-Dec-2013	24-IW5-121213-D	L101-08	FD	5030B	8260B	3
12-Dec-2013	24-BB38-121213	L102-05	N	5030B	8260B	3
12-Dec-2013	24-BB38-121213-D	L102-06	FD	5030B	8260B	3
12-Dec-2013	24-TW-11-121213	L101-09	N	5030B	8260B	3
12-Dec-2013	24-TW-11-121213	L101-09	N	NONE	300.0	3
12-Dec-2013	24-TW-11-121213	L101-09	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-11-121213	L101-09I	N	GEN PREP	RSK-175	3

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Dec-2013	24-TW-11-121213	L101-09J	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-04-121213	L102-07	N	5030B	8260B	3
12-Dec-2013	24-TW-04-121213	L102-07	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-04-121213	L102-07	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-04-121213	L102-07I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-04-121213	L102-07I	N	NONE	300.0	3
12-Dec-2013	24-TW-47-121213	L103-12	N	5030B	8260B	3
12-Dec-2013	24-TW-47-121213	L103-12	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-47-121213	L103-12	N	NONE	SM 2320B	3
12-Dec-2013	24-TW-47-121213	L103-12I	N	5030B	8260B	3
12-Dec-2013	24-TW-47-121213	L103-12I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-TW-47-121213	L103-12I	N	NONE	300.0	3
12-Dec-2013	24-EW11-121213	L101-10	N	5030B	8260B	3
12-Dec-2013	24-EW11-121213	L101-10	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW11-121213	L101-10	N	NONE	SM 2320B	3
12-Dec-2013	24-EW11-121213	L101-10I	N	5030B	8260B	3
12-Dec-2013	24-EW11-121213	L101-10I	N	GEN PREP	RSK-175	3
12-Dec-2013	24-EW11-121213	L101-10I	N	NONE	300.0	3
12-Dec-2013	24-EW11-121213DUP	L101-10ID	DUP	NONE	300.0	3
12-Dec-2013	24-EW11-121213MS	L101-10IM	MS	NONE	300.0	3
12-Dec-2013	24-TW-16-121213	L102-08	N	5030B	8260B	3
12-Dec-2013	24-EW11-121213-D	L103-13	FD	5030B	8260B	3
12-Dec-2013	24-EW11-121213-D	L103-13	FD	GEN PREP	RSK-175	3
12-Dec-2013	24-EW11-121213-D	L103-13	FD	NONE	SM 2320B	3
12-Dec-2013	24-EW11-121213-D	L103-13I	FD	5030B	8260B	3
12-Dec-2013	24-EW11-121213-D	L103-13I	FD	GEN PREP	RSK-175	3

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IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Dec-2013	24-EW11-121213-D	L103-13I	FD	NONE	300.0	3
12-Dec-2013	121213-ER-02	L102-09	ER	GEN PREP	RSK-175	3
12-Dec-2013	121213-ER-02	L102-09	ER	NONE	300.0	3
12-Dec-2013	121213-ER-02	L102-09	ER	NONE	SM 2320B	3
12-Dec-2013	121213-ER-02	L102-09N	ER	5030B	8260B	3
13-Dec-2013	121313-TB-01	L103-14	TB	5030B	8260B	3

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IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **GENCHEM**

Method: **300.0** ***Matrix:*** **AQ**

SDG: 13L101

Sample ID: **121113-ER-01** ***Collected:*** **12/11/2013 5:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.252	J	0.250	LOD	0.500	LOQ	MG/L	U	Fb

Sample ID: **121113-SB-01** ***Collected:*** **12/11/2013 5:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.243	J	0.250	LOD	0.500	LOQ	MG/L	J	RI

Sample ID: **24-BB76-121113** ***Collected:*** **12/11/2013 3:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.401	J	0.250	LOD	0.500	LOQ	MG/L	U	Eb

Sample ID: **24-TW-11-121213** ***Collected:*** **12/12/2013 4:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.389	J	0.250	LOD	0.500	LOQ	MG/L	U	Eb

SDG: 13L102

Sample ID: **121213-ER-02** ***Collected:*** **12/12/2013 5:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	0.250	J	0.250	LOD	0.500	LOQ	MG/L	J	RI

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: 13L065

Sample ID: **21-MW02A-121013** ***Collected:*** **12/10/2013 12:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.36	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
CIS-1,2-DICHLOROETHENE	0.29	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: 13L065

Sample ID: **21-MW09A-121013** ***Collected:*** **12/10/2013 10:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	0.48	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

SDG: 13L101

Sample ID: **24-BB89-121213** ***Collected:*** **12/12/2013 9:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.12	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.11	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW11-121213** ***Collected:*** **12/12/2013 5:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.10	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW16-121113** ***Collected:*** **12/11/2013 11:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.39	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW32-121213** ***Collected:*** **12/12/2013 9:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.31	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-IW21-121113** ***Collected:*** **12/11/2013 10:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TETRACHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.37	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.20	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: 13L101

Sample ID: **24-TW-27-121213** ***Collected:*** **12/12/2013 9:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.26	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TETRACHLOROETHENE	0.21	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.16	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.48	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-41-121213** ***Collected:*** **12/12/2013 2:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.39	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-53-121213** ***Collected:*** **12/12/2013 1:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.27	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.45	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

SDG: 13L102

Sample ID: **24-BB63-121213** ***Collected:*** **12/12/2013 2:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.18	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW29-121113** ***Collected:*** **12/11/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.20	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.25	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: 13L102

Sample ID: **24-EW6-121113** ***Collected:*** **12/11/2013 11:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.10	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.20	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-IW8-121113** ***Collected:*** **12/11/2013 12:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.14	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.24	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-04-121213** ***Collected:*** **12/12/2013 4:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.18	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.23	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-14-121213** ***Collected:*** **12/12/2013 12:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.25	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-14-121213-D** ***Collected:*** **12/12/2013 12:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.24	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-16-121213** ***Collected:*** **12/12/2013 5:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.16	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-25-121113** ***Collected:*** **12/11/2013 2:25:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.34	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: 13L102

Sample ID: **24-TW-42-121113** ***Collected:*** **12/11/2013 4:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.24	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

SDG: 13L103

Sample ID: **24-EW11-121213-D** ***Collected:*** **12/12/2013 5:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.12	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW12-121213** ***Collected:*** **12/12/2013 1:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.28	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.16	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.12	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.28	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW28-121213** ***Collected:*** **12/12/2013 9:05:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.38	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.18	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.23	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-EW4-121113** ***Collected:*** **12/11/2013 10:45:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.33	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-28-121213** ***Collected:*** **12/12/2013 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	0.17	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **AQ**

SDG: **13L103**

Sample ID: **24-TW-36-121113** ***Collected:*** **12/11/2013 4:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.34	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.38	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.43	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-43-121113** ***Collected:*** **12/11/2013 3:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.24	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRANS-1,2-DICHLOROETHENE	0.27	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-47-121213** ***Collected:*** **12/12/2013 4:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	0.33	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.20	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-49-121213** ***Collected:*** **12/12/2013 12:00:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	0.22	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

Sample ID: **24-TW-50-121113** ***Collected:*** **12/11/2013 11:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	0.46	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
TRICHLOROETHENE	0.10	J	0.20	LOD	0.50	LOQ	UG/L	J	RI
VINYL CHLORIDE	0.27	J	0.20	LOD	0.50	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **RSK-175** ***Matrix:*** **AQ**

SDG: 13L065

Sample ID: **121013-ER-01** ***Collected:*** **12/10/2013 4:40:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	0.27	J	0.34	LOD	5.0	LOQ	UG/L	J	RI

Sample ID: **21-MW02A-121013** ***Collected:*** **12/10/2013 12:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	0.66	J	0.60	LOD	5.0	LOQ	UG/L	J	RI

Sample ID: **21-MW09A-121013** ***Collected:*** **12/10/2013 10:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	0.44	J	0.60	LOD	5.0	LOQ	UG/L	J	RI

SDG: 13L101

Sample ID: **121113-ER-01** ***Collected:*** **12/11/2013 5:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	6.8		0.34	LOD	5.0	LOQ	UG/L	U	Fb

Sample ID: **24-BB76-121113** ***Collected:*** **12/11/2013 3:55:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHANE	4.3	J	0.64	LOD	5.0	LOQ	UG/L	J	RI

SDG: 13L102

Sample ID: **121213-ER-02** ***Collected:*** **12/12/2013 5:50:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHANE	0.24	J	0.34	LOD	5.0	LOQ	UG/L	J	RI

Sample ID: **24-EW29-121113** ***Collected:*** **12/11/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHANE	55		0.64	LOD	5.0	LOQ	UG/L	J	Ms

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103 **Laboratory: EMXT**

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103 **eQAPP Name: TRV1205_**

Method Category: **VOA**

Method: **RSK-175** ***Matrix:*** **AQ**

SDG: 13L102

Sample ID: **24-EW29-121113** ***Collected:*** **12/11/2013 9:35:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	5.0	U	0.60	LOD	5.0	LOQ	UG/L	UJ	Ms

Sample ID: **24-TW-14-121213** ***Collected:*** **12/12/2013 12:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	1.4	J	0.60	LOD	5.0	LOQ	UG/L	J	RI

Sample ID: **24-TW-14-121213-D** ***Collected:*** **12/12/2013 12:20:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	1.4	J	0.60	LOD	5.0	LOQ	UG/L	J	RI

SDG: 13L103

Sample ID: **24-TW-28-121213** ***Collected:*** **12/12/2013 10:15:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHENE	1.0	J	0.60	LOD	5.0	LOQ	UG/L	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Data Qualifier Summary

Lab Reporting Batch ID: 13L065, 13L101, 13L102, 13L103

Laboratory: EMXT

EDD Filename: Prep13L065, Prep13L101, Prep13L102, Prep13L103

eQAPP Name: TRV1205_

Reason Code Legend

Reason Code	*Description*
Eb	Equipment Blank Contamination
Fb	Field Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

13L065

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13L065 **Laboratory: EMXT**

EDD Filename: 13L065 **eQAPP Name: TRV1205_**

Method: **RSK-175**
Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
21-MW02A -121013MS 21-MW02A -121013MSD (21-MW02A -121013 21-MW02A-121013DL)	METHANE	24	38	80.00-120.00	-	METHANE	No Qual, >4x

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Reporting Limit Outliers

Lab Reporting Batch ID: 13L065 **Laboratory: EMXT**

EDD Filename: 13L065 **eQAPP Name: TRV1205_**

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
21-MW02A-121013	CIS-1,2-DICHLOROETHENE VINYL CHLORIDE	J J	0.29 0.36	0.50 0.50	LOQ LOQ	UG/L UG/L	J (all detects)
21-MW09A-121013	TETRACHLOROETHENE	J	0.48	0.50	LOQ	UG/L	J (all detects)

Method: RSK-175

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
121013-ER-01	METHANE	J	0.27	5.0	LOQ	UG/L	J (all detects)
21-MW02A-121013	ETHANE ETHENE	J J	17 0.66	250 5.0	LOQ LOQ	UG/L UG/L	J (all detects)
21-MW09A-121013	ETHANE ETHENE	J J	24 0.44	50 5.0	LOQ LOQ	UG/L UG/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 13L065 **Laboratory: EMXT**

EDD Filename: 13L065 **eQAPP Name: TRV1205_**

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-IP07-121013	21-IP07-121013-D			
TRANS-1,2-DICHLOROETHENE	9.9	10	1	30.00	No Qualifiers Applied
VINYL CHLORIDE	14	14	0	30.00	

Method: RSK-175
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	21-IP07-121013	21-IP07-121013-D			
ETHANE	90	87	3	30.00	No Qualifiers Applied
ETHENE	30	29	3	30.00	
METHANE	7500	6600	13	30.00	

LDC #: 31175A1
SDG #: 13L065
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/W

Date: 1/24/13
Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|CV| CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	↓	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	↓	Not reviewed for ADR validation.
XIV.	System performance	↓	Not reviewed for ADR validation.
XV.	Overall assessment of data	↓	Not reviewed for ADR validation.
XVI.	Field duplicates	—	FD = 3 + 4
XVII.	Field blanks	—	TB = 1 EB = 1

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	121013-TB-01	11		21		31	MBLKW
2	21-MW09A-121013**	12		22		32	
3	21-IP07-121013	13		23		33	
4	21-IP07-121013-D	14		24		34	
5	21-MW02A-121013	15		25		35	
6	121013-ER-01	16		26		36	
7	21-MW02A-121013MS	17		27		37	
8	21-MW02A-121013MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31175A51

SDG #: 13L065

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/24/13

Page: 1 of 1

Reviewer: BK

2nd Reviewer:

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/13
II	Initial calibration	A	RSD ≤ 20?
III.	Calibration verification/ICV	A	1 CW 1 CCV ≤ 20?
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	—	FD = 3 + 5, 4 + 6
XIII.	Field blanks	—	EB = 9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	21-MW09A-121013**	11	21-MW02A-121013MSD	21		31	MB2K1W
2	21-MW09A-121013DL**	12		22		32	
3	21-IP07-121013	13		23		33	
4	21-IP07-121013DL	14		24		34	
5	21-IP07-121013-D	15		25		35	
6	21-IP07-121013-DDL	16		26		36	
7	21-MW02A-121013	17		27		37	
8	21-MW02A-121013DL	18		28		38	
9	121013-ER-01	19		29		39	
10	21-MW02A-121013MS	20		30		40	

Notes:

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: _____

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 3, 5, 7	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: KX
2nd Reviewer: _____

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 3, 5, 7	~~DNA~~ X/A
	All except Methane	dilution	2, 4, 6, 8	↓

Comments: _____

OVRNew2.wpd

Quality Control Outlier Reports

13L101

Equipment Rinsate Blank Outlier Report

Lab Reporting Batch ID: 13L101 **Laboratory: EMXT**

EDD Filename: 13L101 **eQAPP Name: TRV1205_**

Method: **300.0**
Matrix: **AQ**

Equipment Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
121113-ER-01(RES)	12/11/2013 5:30:00 PM	SULFATE	0.252 MG/L	24-BB76-121113 24-EW16-121113 24-EW30-121113 24-IW21-121113
121213-ER-02(RES)	12/12/2013 5:50:00 PM	SULFATE	0.25 MG/L	24-BB89-121213 24-EW11-121213 24-EW32-121213 24-EW33-121213 24-EW34-121213 24-IW5-121213 24-IW5-121213-D 24-TW-11-121213 24-TW-27-121213 24-TW-41-121213 24-TW-53-121213

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
24-BB76-121113(RES)	SULFATE	0.401 MG/L	0.401U MG/L
24-TW-11-121213(RES)	SULFATE	0.389 MG/L	0.389U MG/L

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Field Blank Outlier Report

Lab Reporting Batch ID: 13L101 **Laboratory: EMXT**

EDD Filename: 13L101 **eQAPP Name: TRV1205_**

Method: **300.0**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
121113-SB-01(RES)	12/11/2013 5:20:00 PM	SULFATE	0.243 MG/L	121113-ER-01

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
121113-ER-01(RES)	SULFATE	0.252 MG/L	0.252U MG/L

Method: **RSK-175**
Matrix: **AQ**

Field Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
121113-SB-01(RES)	12/11/2013 5:20:00 PM	METHANE	20 UG/L	121113-ER-01

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
121113-ER-01(RES)	METHANE	6.8 UG/L	6.8U UG/L

Reporting Limit Outliers

Lab Reporting Batch ID: 13L101 **Laboratory: EMXT**

EDD Filename: 13L101 **eQAPP Name: TRV1205_**

Method: 300.0

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
121113-ER-01	SULFATE	J	0.252	0.500	LOQ	MG/L	J (all detects)
121113-SB-01	SULFATE	J	0.243	0.500	LOQ	MG/L	J (all detects)
24-BB76-121113	SULFATE	J	0.401	0.500	LOQ	MG/L	J (all detects)
24-TW-11-121213	SULFATE	J	0.389	0.500	LOQ	MG/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
24-BB89-121213	CIS-1,2-DICHLOROETHENE	J	0.12	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.11	0.50	LOQ	UG/L	
24-EW11-121213	TRICHLOROETHENE	J	0.10	0.50	LOQ	UG/L	J (all detects)
24-EW16-121113	TRANS-1,2-DICHLOROETHENE	J	0.17	0.50	LOQ	UG/L	J (all detects)
	VINYL CHLORIDE	J	0.39	0.50	LOQ	UG/L	
24-EW32-121213	CIS-1,2-DICHLOROETHENE	J	0.31	0.50	LOQ	UG/L	J (all detects)
	TRICHLOROETHENE	J	0.17	0.50	LOQ	UG/L	
24-IW21-121113	TETRACHLOROETHENE	J	0.17	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.37	0.50	LOQ	UG/L	
	TRICHLOROETHENE	J	0.17	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.20	0.50	LOQ	UG/L	
24-TW-27-121213	CIS-1,2-DICHLOROETHENE	J	0.26	0.50	LOQ	UG/L	J (all detects)
	TETRACHLOROETHENE	J	0.21	0.50	LOQ	UG/L	
	TRANS-1,2-DICHLOROETHENE	J	0.17	0.50	LOQ	UG/L	
	TRICHLOROETHENE	J	0.16	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.48	0.50	LOQ	UG/L	
24-TW-41-121213	TRANS-1,2-DICHLOROETHENE	J	0.39	0.50	LOQ	UG/L	J (all detects)
24-TW-53-121213	TRANS-1,2-DICHLOROETHENE	J	0.27	0.50	LOQ	UG/L	J (all detects)
	TRICHLOROETHENE	J	0.45	0.50	LOQ	UG/L	

Method: RSK-175

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
24-BB76-121113	ETHANE	J	4.3	5.0	LOQ	UG/L	J (all detects)
24-EW11-121213	ETHANE	J	11	100	LOQ	UG/L	J (all detects)
	ETHENE	J	53	100	LOQ	UG/L	
24-EW32-121213	ETHANE	J	91	1000	LOQ	UG/L	J (all detects)

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Field Duplicate RPD Report

Lab Reporting Batch ID: 13L101 **Laboratory: EMXT**

EDD Filename: 13L101 **eQAPP Name: TRV1205_**

Method: 300.0
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW11-121213	24-EW11-121213-D			
SULFATE	399	437	9	30.00	No Qualifiers Applied

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-IW5-121213	24-IW5-121213-D			
CIS-1,2-DICHLOROETHENE	41	43	5	30.00	No Qualifiers Applied
TETRACHLOROETHENE	0.57	0.60	5	30.00	
TRANS-1,2-DICHLOROETHENE	0.77	0.77	0	30.00	
TRICHLOROETHENE	2.8	2.9	4	30.00	
VINYL CHLORIDE	15	14	7	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW11-121213	24-EW11-121213-D			
CIS-1,2-DICHLOROETHENE	160	120	29	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	8.4	7.9	6	30.00	
TRICHLOROETHENE	0.10	0.12	18	30.00	
VINYL CHLORIDE	160	62	88	30.00	

Method: RSK-175
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW11-121213	24-EW11-121213-D			
ETHANE	11	10	10	30.00	No Qualifiers Applied
ETHENE	56	50	11	30.00	
METHANE	370	280	28	30.00	

Method: SM 2320B
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	24-EW11-121213	24-EW11-121213-D			
ALKALINITY	536	508	5	30.00	No Qualifiers Applied

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

LDC #: 31175B1
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR IV

Date: 1/28/14
Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	1W (CCV ≤ 25)
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	↓	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VIII.	Laboratory control samples	↓	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	N	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	—	FD = 7 + 8, 10 + 24-EW 121213-D (SDG # 13L103)
XVII.	Field blanks	—	TB = 11, SB = 16 ER = 17, 121213-ER-02 (SDG: 13L02)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-TW-27-121213**	11 2	121113-TB-01	21	# 10 DL	31 1	MBLK1W
2	24-EW32-121213	12 2	24-EW30-121113	22		32 2	MBLK2W
3	24-EW3-121213	13 2	24-IW21-121113**	23		33	
4	24-EW34-121213	14	24-EW16-121113**	24		34	
5	24-TW-53-121213	15	24-BB76-121113	25		35	
6	24-TW-41-121213	16	121113-SB-01	26		36	
7	24-IW5-121213**	17 2	121113-ER-01	27		37	
8	24-IW5-121213-D	18	24-BB89-121213	28		38	
9	24-TW-11-121213	19 2	24-EW30-121113MS	29		39	
10	24-EW11-121213	20 2	24-EW30-121113MSD	30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31175B1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: BR
2nd Reviewer: _____

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	10	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175B1

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: _____

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	10	R/A
		All except above	dilution	21	

Comments: _____

LDC #: 31175B51
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/28/14
Page: 1 of 1
Reviewer: RR
2nd Reviewer:

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	—	SB = 13 ER = 14

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-EW32-121213	11	24-IW21-121113DL2**	21		31	MBLK1W
2	24-EW32-121213DL	12	24-BB76-121113	22		32	
3	24-EW32-121213DL2	13	121113-SB-01	23		33	
4	24-TW-41-121213	14	121113-ER-01	24		34	
5	24-TW-11-121213	15	#4 DL	25		35	
6	24-TW-11-121213DL	16	#12 DL	26		36	
7	24-EW11-121213	17		27		37	
8	24-EW11-121213DL	18		28		38	
9	24-IW21-121113**	19		29		39	
10	24-IW21-121113DL**	20		30		40	

Notes:

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: _____

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Ethane, methane	exceeded calibration range	1, 9	J det/A
		↓		↓
	Methane	↓	2, 4, 5, 7, 10, 12	↓

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: _____

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Ethane, Methane	exceeded calibration range	1, 9	~~R/A~~ X/A
	All except Ethane	dilution + x'l calib. range	2, 10	
	All except Methane	dilution	3, 15, 6, 8, 11, 14	
	Methane	x'l. calib. range	4, 5, 7, 12	✓

Comments: _____

LDC #: 31175B6
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/~~IV~~

Date: 1/21/14
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Alkalinity (SM2320B), Sulfate (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation.
VI.	Duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation.
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	—	ER=8 SB=9 12/12/13-ER-02 (SDG 132202)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	24-EW32-121213	11	MB	21		31	
2	24-TW-41-121213	12		22		32	
3	24-TW-11-121213	13		23		33	
4	24-EW11-121213	14		24		34	
5	24-IW21-121113**	15		25		35	
6	24-BB76-121113	16		26		36	
7	121113-SB-01	17		27		37	
8	121113-ER-01	18		28		38	
9	24-EW11-121213MS	19		29		39	
10	24-EW11-121213DUP	20		30		40	

Notes:

Quality Control Outlier Reports

13L102

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 13L102 **Laboratory: EMXT**

EDD Filename: 13L102 **eQAPP Name: TRV1205_**

Method: **RSK-175**

Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
24-EW29 -121113MS **24-EW29 -121113MSD** (24-EW29-121113, 24-EW29-121113DL)	METHANE	-124	-114	80.00-120.00	-	METHANE	No Qual, >4x
24-EW29 -121113MS **24-EW29 -121113MSD** (24-EW29-121113, 24-EW29-121113DL)	ETHANE ETHENE	70 73	69 74	80.00-120.00 80.00-120.00	- -	ETHANE ETHENE	J(all detects) UJ(all non-detects)

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Reporting Limit Outliers

Lab Reporting Batch ID: 13L102 **Laboratory: EMXT**

EDD Filename: 13L102 **eQAPP Name: TRV1205_**

Method: 300.0

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
121213-ER-02	SULFATE	J	0.250	0.500	LOQ	MG/L	J (all detects)

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
24-BB63-121213	TRANS-1,2-DICHLOROETHENE	J	0.18	0.50	LOQ	UG/L	J (all detects)
24-EW29-121113	TRANS-1,2-DICHLOROETHENE TRICHLOROETHENE VINYL CHLORIDE	J J J	0.20 0.17 0.25	0.50 0.50 0.50	LOQ LOQ LOQ	UG/L UG/L UG/L	J (all detects)
24-EW6-121113	TRANS-1,2-DICHLOROETHENE TRICHLOROETHENE	J J	0.10 0.20	0.50 0.50	LOQ LOQ	UG/L UG/L	J (all detects)
24-IW8-121113	TRANS-1,2-DICHLOROETHENE TRICHLOROETHENE	J J	0.14 0.24	0.50 0.50	LOQ LOQ	UG/L UG/L	J (all detects)
24-TW-04-121213	TRANS-1,2-DICHLOROETHENE TRICHLOROETHENE	J J	0.18 0.23	0.50 0.50	LOQ LOQ	UG/L UG/L	J (all detects)
24-TW-14-121213	TRICHLOROETHENE	J	0.25	0.50	LOQ	UG/L	J (all detects)
24-TW-14-121213-D	TRICHLOROETHENE	J	0.24	0.50	LOQ	UG/L	J (all detects)
24-TW-16-121213	TRANS-1,2-DICHLOROETHENE	J	0.16	0.50	LOQ	UG/L	J (all detects)
24-TW-25-121113	TRANS-1,2-DICHLOROETHENE	J	0.34	0.50	LOQ	UG/L	J (all detects)
24-TW-42-121113	CIS-1,2-DICHLOROETHENE	J	0.24	0.50	LOQ	UG/L	J (all detects)

Method: RSK-175

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
121213-ER-02	METHANE	J	0.24	5.0	LOQ	UG/L	J (all detects)
24-TW-14-121213	ETHANE ETHENE	J J	22 1.4	250 5.0	LOQ LOQ	UG/L UG/L	J (all detects)
24-TW-14-121213-D	ETHANE ETHENE	J J	21 1.4	250 5.0	LOQ LOQ	UG/L UG/L	J (all detects)

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

Field Duplicate RPD Report

Lab Reporting Batch ID: 13L102 **Laboratory: EMXT**

EDD Filename: 13L102 **eQAPP Name: TRV1205_**

Method: 300.0
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-14-121213	24-TW-14-121213-D			
SULFATE	199	198	1	30.00	No Qualifiers Applied

Method: 8260B
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-14-121213	24-TW-14-121213-D			
CIS-1,2-DICHLOROETHENE	62	60	3	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.50	0.50	0	30.00	
TRICHLOROETHENE	0.25	0.24	4	30.00	
VINYL CHLORIDE	29	29	0	30.00	

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-BB38-121213	24-BB38-121213-D			
CIS-1,2-DICHLOROETHENE	30	31	3	30.00	No Qualifiers Applied
TRANS-1,2-DICHLOROETHENE	0.57	0.57	0	30.00	
TRICHLOROETHENE	1.7	1.7	0	30.00	
VINYL CHLORIDE	8.3	9.3	11	30.00	

Method: RSK-175
Matrix: AQ

Analyte	Concentration (UG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-14-121213	24-TW-14-121213-D			
ETHANE	28	30	7	30.00	No Qualifiers Applied
ETHENE	1.4	1.4	0	30.00	
METHANE	850	780	9	30.00	

Method: SM 2320B
Matrix: AQ

Analyte	Concentration (MG/L)		Sample RPD	eQAPP RPD	Flag
	24-TW-14-121213	24-TW-14-121213-D			
ALKALINITY	522	518	1	30.00	No Qualifiers Applied

Project Name and Number: A111 - TREASURE ISLAND IR SITES 21 & 24

LDC #: 31175C1

SDG #: 13L102

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR IV

Date: 1/28/14

Page: 1 of 1

Reviewer: BR

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	1W1 CCV ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates	—	FD = 1+2, 5+6
XVII.	Field blanks	—	ER = 9, 121113-ER-01 (SDG: 13L101)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-TW-14-121213	11	24-EW6-121113	21		31 1	MB2K1W
2	24-TW-14-121213-D	12	24-IW8-121113	22		32 2	MB1K2W
3	24-BB80-121213**	13	24-TW-25-121113	23		33	
4	24-BB63-121213	14	24-EW31-121113**	24		34	
5	24-BB38-121213	15	24-TW-42-121113**	25		35	
6	24-BB38-121213-D	16	24-EW29-121113MS	26		36	
7	24-TW-04-121213	17	24-EW29-121113MSD	27		37	
8	24-TW-16-121213	18		28		38	
9 2	121213-ER-02	19		29		39	
10	24-EW29-121113	20		30		40	

LDC #: 31175C51

SDG #: 13L102

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 1-28-14

Page: 1 of 1

Reviewer: APL

2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/13
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	CCV/ICV ≤ 20 %
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Ethane, ethene, Methane ↑; No Qual methane >4x
VII.	Laboratory control samples	N	Not reviewed for ADR validation.
VIII.	Target compound identification	N	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	N	Not reviewed for ADR validation. #1,3,5,8,13 methane; #10 methane, ethane } Exceeded Calib. Range J(dets)/A
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation. See compound quantitation
XII.	Field duplicates	N	
XIII.	Field blanks	N	ER= 7

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	24-TW-14-121213	11	24-EW6-121113DL	21	① ~~MBLW~~ MBLK1W	31	
2	24-TW-14-121213DL	12	24-EW6-121113DL2	22		32	
3	24-TW-14-121213-D	13	24-IW8-121113	23		33	
4	24-TW-14-121213-DDL	14	24-IW8-121113DL	24		34	
5	24-TW-04-121213	15	24-EW29-121113MS	25		35	
6	24-TW-04-121213DL	16	24-EW29-121113MSD	26		36	
7	121213-ER-02	17		27		37	
8	24-EW29-121113	18		28		38	
9	24-EW29-121113DL	19		29		39	
10	24-EW6-121113	20		30		40	

Notes:

LDC #: 31175C6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/14
SDG #: 13L102 ADR Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320B), Sulfate (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation.
VI.	Duplicates	A	Not reviewed for ADR validation. LCS/D
VII.	Laboratory control samples	A	Not reviewed for ADR validation.
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	—	(1, 2)
XI	Field blanks	—	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: [illegible]

1	24-TW-14-121213	11		21		31	
2	24-TW-14-121213-D	12		22		32	
3	24-TW-04-121213	13		23		33	
4	121213-ER-02	14		24		34	
5	24-EW29-121113	15		25		35	
6	24-EW6-121113	16		26		36	
7	24-IW8-121113	17		27		37	
8	24-EW29-121113MS	18		28		38	
9	24-EW29-121113DUP	19		29		39	
10		20		30		40	

Notes:

LDC #: 31175 C6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: MM
2nd reviewer: _____

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-7	W	pH TDS Cl F NO_3 NO_2 (SO4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
W 8, 9	W	pH TDS Cl F NO_3 NO_2 (SO4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
L 9	L	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____

Comments: _____

Quality Control Outlier Reports

13L103

Reporting Limit Outliers

Lab Reporting Batch ID: 13L103 **Laboratory: EMXT**

EDD Filename: 13L103 **eQAPP Name: TRV1205_**

Method: 8260B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
24-EW11-121213-D	TRICHLOROETHENE	J	0.12	0.50	LOQ	UG/L	J (all detects)
24-EW12-121213	CIS-1,2-DICHLOROETHENE	J	0.28	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.16	0.50	LOQ	UG/L	
	TRICHLOROETHENE	J	0.12	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.28	0.50	LOQ	UG/L	
24-EW28-121213	CIS-1,2-DICHLOROETHENE	J	0.38	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.18	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.23	0.50	LOQ	UG/L	
24-EW4-121113	TRICHLOROETHENE	J	0.33	0.50	LOQ	UG/L	J (all detects)
24-TW-28-121213	TRICHLOROETHENE	J	0.17	0.50	LOQ	UG/L	J (all detects)
24-TW-36-121113	CIS-1,2-DICHLOROETHENE	J	0.34	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.38	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.43	0.50	LOQ	UG/L	
24-TW-43-121113	CIS-1,2-DICHLOROETHENE	J	0.24	0.50	LOQ	UG/L	J (all detects)
	TRANS-1,2-DICHLOROETHENE	J	0.27	0.50	LOQ	UG/L	
24-TW-47-121213	TRANS-1,2-DICHLOROETHENE	J	0.33	0.50	LOQ	UG/L	J (all detects)
	TRICHLOROETHENE	J	0.20	0.50	LOQ	UG/L	
24-TW-48-121213	TRANS-1,2-DICHLOROETHENE	J	6.8	25	LOQ	UG/L	J (all detects)
24-TW-49-121213	VINYL CHLORIDE	J	0.22	0.50	LOQ	UG/L	J (all detects)
24-TW-50-121113	CIS-1,2-DICHLOROETHENE	J	0.46	0.50	LOQ	UG/L	J (all detects)
	TRICHLOROETHENE	J	0.10	0.50	LOQ	UG/L	
	VINYL CHLORIDE	J	0.27	0.50	LOQ	UG/L	

Method: RSK-175

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
24-EW11-121213-D	ETHANE	J	7.2	100	LOQ	UG/L	J (all detects)
	ETHENE	J	39	100	LOQ	UG/L	
24-EW12-121213	ETHANE	J	150	2000	LOQ	UG/L	J (all detects)
24-TW-28-121213	ETHENE	J	1.0	5.0	LOQ	UG/L	J (all detects)
24-TW-48-121213	ETHENE	J	680	4000	LOQ	UG/L	J (all detects)

LDC #: 31175D1

SDG #: 13L103

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/28/14

Page: 1 of 1

Reviewer: BR

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|CCV| ≤ 25%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	N	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	N	TB=17, ER: 121113-ER-01 (SDG: 13L101) 121213-ER-02 (SDG: 13L102)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	24-TW-37-121113**	11	24-TW-48-121213**	21		31	MB2K1W
2	24-EW4-121113**	12	24-TW-48-121213DL**	22		32	
3	24-TW-50-12113	13	24-TW-47-121213	23		33	
4	24-TW-26-121113	14	24-TW-47-121213DL	24		34	
5	24-TW-43-121113	15	24-EW11-121213-D	25		35	
6	24-TW-36-121113	16	24-EW11-121213-DDL	26		36	
7	24-EW28-121213D	17	121313-TB-01	27		37	
8	24-TW-28-121213	18		28		38	
9	24-TW-49-121213	19		29		39	
10	24-EW12-121213	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 311759

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: BR
2nd Reviewer: _____

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		QDQ, C	exceeded calibration range	11	J det/A
			↓		↓
		C	↓	13, 15	↓

Comments: See sample calculation verification worksheet for recalculations

COMQUA_BR.wpd

LDC #: 31175D1
BR

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: BR
2nd Reviewer: _____

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		QQQ, C	exceeded calibration range	11	~~R/A~~ BR X/A
		All except above	dilution	12	
		C	x1d. calib. range	13, 15	
		All except C	dilution	14, 16	

Comments: _____

LDC #: 31175D51
SDG #: 13L103
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/28/14
Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/13
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	ICV/CCV ≤20%
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	↓	Not reviewed for ADR validation.
VII.	Laboratory control samples	↓	Not reviewed for ADR validation.
VIII.	Target compound identification	↓	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	N	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	N	ER= 121113-ER-01 (SDG: 13L101) 121213-ER-02 (SDG: 13L102

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-TW-28-121213	11	4 DDL	21		31	MBLK1W
2	24-TW-28-121213DL	12		22		32	
3	24-EW12-121213	13		23		33	
4	24-EW12-121213DL	14		24		34	
5	24-TW-48-121213**	15		25		35	
6	24-TW-48-121213DL**	16		26		36	
7	24-TW-47-121213	17		27		37	
8	24-TW-47-121213DL	18		28		38	
9	24-EW11-121213-D	19		29		39	
10	24-EW11-121213-DDL	20		30		40	

Notes:

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: _____

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 4, 5, 7, 9	J det/A
		↓		↓
	Ethane, methane		3	

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175051

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: _____

METHOD: X GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1, 4, 5, 7, 9	~~R/A~~ X/A
	All except Methane	dilution	2, 6, 8, 10, 11	
	Ethane, Methane	x'd. calib. range	3	
	All except Ethane	~~x'd~~ x'd. calib. range + dilution	4	✓

Comments: _____

OVRNew2.wpd

LDC #: 31175D6

SDG #: 13L103

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR~~IV~~

Date: 1/21/14

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Alkalinity (SM2320B), Sulfate (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. } C.S.
VI.	Duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation.
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	—	
XI	Field blanks	—	ER= ~~121113-ER-01~~ APL 1/29/14

121213 - ER-02 (SDG: 13L102)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	24-TW-28-121213	11		21		31	
2	24-EW12-121213	12		22		32	
3	24-TW-48-121213**	13		23		33	
4	24-TW-47-121213	14		24		34	
5	24-EW11-121213-D	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065

Sample Identification

21-MW09A-121013

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 121013-TB-01 was identified as a trip blank. No volatile contaminants were found.

Sample 121013-ER-01 was identified as an equipment rinsate. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13L065

SDG	Sample	Compound	Flag	A or P	Reason
13L065	21-MW09A-121013	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13L065

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13L065

No Sample Data Qualified in this SDG

LDC #: 31175A1
SDG #: 13L065
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/24/13
Page: 1 of 1
Reviewer: KR
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 25%
V.	Blanks	A	~~Not reviewed for ADR validation.~~
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation. MS L4 sample
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation.~~ LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	~~Not reviewed for ADR validation.~~
XVI.	Field duplicates	A	~~FD = 3 + 4~~
XVII.	Field blanks	ND	TB = 1 ER = 6

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~121013-TB-01~~	11		21		31	MB2K1W
2	21-MW09A-121013**	12		22		32	
3	~~21-IP07-121013~~	13		23		33	
4	21-IP07-121013-D	14		24		34	
5	21-MW02A-121013	15		25		35	
6	121013-ER-01	16		26		36	
7	21-MW02A-121013MS	17		27		37	
8	21-MW02A-121013MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 311754I

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 31175A1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31175A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/21/2013	Trichloroethene (IS1)	0.419	0.419	0.410	0.409	6.21	6.20
	TO67		Tetrachloroethene (IS2)	0.484	0.484	0.484	0.484	6.26	6.28

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31175A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RLC199	12/12/2013	Trichloroethene (IS1)	0.410	0.359	0.359	12.4	12.5
			Tetrachloroethene (IS2)	0.484	0.386	0.386	20.2	20.2
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: A

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.73	107	107	0
1,2-Dichloroethane-d4	↓	108.70	109	109	0
Toluene-d8		9.16	91.6	91.6	0
Bromofluorobenzene	↓	8.74	~~107~~ 87.4	87.4	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 31175A1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 7/8

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,~~1-Dichloroethene~~ AA	10.0	10.0	3.72	12.1	11.8	84	84	80	80.8	3	2.5
Trichloroethene	10.0	10.0	1.37	10.8	10.4	94	94	91	90.3	3	3.8
Benzene											
Toluene											
Chlorobenzene											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W/ LCD1W

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,~~1-Dichloroethene~~ AA	10.0	10.0	8.52	8.49	85	85	85	85	0	0.4
Trichloroethene	↓	↓	9.64	9.63	96	96	96	96	0	0.1
Benzene										
Toluene										
Chlorobenzene										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

S = 3.8 ug/L

Sample I.D. 2, S:

Conc. = $\frac{(226952)(10)(\quad)(\quad)}{(1450095)(0.40)(\quad)(\quad)}$

= 3.817279869 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 10, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L065

Sample Identification

21-MW09A-121013
21-MW09A-121013DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

Sample 121013-ER-01 was identified as an equipment rinsate. No methane, ethane, or ethene contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
121013-ER-01	12/10/13	Methane	0.27 ug/L	All samples in SDG 13L065

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since there were no associated samples, no data were qualified.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
21-MW09A-121013	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L065	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
21-MW09A-121013	Methane	X	A

Sample	Compound	Flag	A or P
21-MW09A-121013DL	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13L065

SDG	Sample	Compound	Flag	A or P	Reason
13L065	21-MW09A-121013	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13L065	21-MW09A-121013 21-MW09A-121013DL	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation
13L065	21-MW09A-121013	Methane	X	A	Overall assessment of data
13L065	21-MW09A-121013DL	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13L065

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13L065

No Sample Data Qualified in this SDG

LDC #: 31175A51
SDG #: 13L065
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR (IV)

Date: 1/24/13
Page: 1 of 1
Reviewer: SK
2nd Reviewer: A

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	A	Not ~~reviewed for ADR validation~~.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	SW	Not reviewed for ADR validation. non L4 samples % Rout
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ~~ADR validation.~~
XII.	Field duplicates	N	
XIII.	Field blanks	SW ~~N~~	EB = 9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	21-MW09A-121013**	11	21-~~MW02A-121013MSD~~	21		31	MBLKW
2	21-MW09A-121013DL**	12		22		32	
3	21-~~IP07-121013~~	13		23		33	
4	21-IP07-121013DL	14		24		34	
5	21-IP07-121013-D	15		25		35	
6	21-IP07-121013-DDL	16		26		36	
7	21-MW02A-121013	17		27		37	
8	21-MW02A-121013DL	18		28		38	
9	121013-ER-01	19		29		39	
10	21-~~MW02A-121013MS~~	20		30		40	

Notes:

LDC #: 31175A51

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓ ✓			non L4 sample
Was a MS/MSD analyzed every 20 samples of each matrix?				
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31175A5)

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

LDC #: 31175AS1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: BR
2nd Reviewer:

METHOD: X **GC** __ **HPLC**
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/10/13
Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other:_____
Associated Samples: 1-2 (75x)

Compound	Blank ID	Blank ID	Sample Identification							
	9									
Methane	0.27									
CRQL										

Blank units:_____ **Associated sample units:**_____
Sampling date:_____
Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other:_____
Associated Samples:_____

Compound	Blank ID	Blank ID	Sample Identification							
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31175AB 1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	1	~~R/A~~ X/A
	All except methane	dilution	2	J

Comments: _____

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC __X_____ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 3.4 std)	Recalculated (CF 3.4 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/11/2013	Methane	32131	32131	32355.3	32355.2	6.9	6.9
	GCT010								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC x HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	FL16003A	12/16/2013 10:08	Methane	13.6	13.96	13.96	3	3
2	FL16016A	12/16/2013 12:51	Methane	13.6	12.51	12.51	8	8

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: BR

2nd Reviewer: C

METHOD: ✓ GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 10/11

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)	13.6	13.6	179	182	184	24	22	38	37	1	1.1
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A5)

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W / LCD1W

Compound	Spike Added (µg/L)		Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)	13.6	13.6	13.0	13.1	96	96	96	96	1	0.8
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175A51

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

CH4 = 150 ug/L

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name Methane

Concentration = (487895.0)(10) / (32355.3)
= 150.7929149 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 11 through December 12, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L101

Sample Identification

24-TW-27-121213
24-IW5-121213
24-IW21-121113
24-EW16-121113

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 121113-TB-01 was identified as a trip blank. No volatile contaminants were found.

Samples 121213-ER-02 (from SDG 13L102) and 121113-ER-01 were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L101	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples 24-IW5-121213 and 24-IW5-121213-D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	24-IW5-121213	24-IW5-121213-D	
cis-1,2-Dichloroethene	41	43	5 (≤30)
Tetrachloroethene	0.57	0.60	5 (≤30)
trans-1,2-Dichloroethene	0.77	0.77	0 (≤30)
Trichloroethene	2.8	2.9	4 (≤30)
Vinyl chloride	15	14	7 (≤30)

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13L101

SDG	Sample	Compound	Flag	A or P	Reason
13L101	24-TW-27-121213 24-IW5-121213 24-IW21-121113 24-EW16-121113	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

LDC #: 31175B1
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/28/14
Page: 1 of 1
Reviewer: SR
2nd Reviewer: C

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30% r²
IV.	Continuing calibration/ICV	A	|CW| CCV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation. m L4 sample
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	SW	FD = 7 + 8
XVII.	Field blanks	ND	TB = 11 ~~SB = 16~~ EB = 17, 121213-EB-02 (13L10

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-TW-27-121213**	11	~~121113-TB-01~~	21	~~#10 AC~~	31	MBLK1W
2	~~24-EW32-121213~~	12	~~24-EW30-121113~~	22		32	MBLK2W
3	24-EW3-121213	13	24-IW21-121113**	23		33	
4	24-EW34-121213	14	24-EW16-121113**	24		34	
5	24-TW-53-121213	15	24-BB76-121113	25		35	
6	24-TW-41-121213	16	121113-SB-01	26		36	
7	24-IW5-121213**	17	121113-ER-01	27		37	
8	~~24-IW5-121213~~-D	18	24-BB89-121213	28		38	
9	24-TW-11-121213	19	24-EW30-121113MS	29		39	
10	~~24-EW11-121213~~	20	~~24-EW30-121113MSD~~	30		40	

LDC #: 31175B1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30%/~~15%~~ RR and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ ~~20%~~ 25 RR and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 31175B1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC#: 31175B1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: RK
2nd Reviewer: [illegible]

METHOD: GCMS Volatiles (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (µg/L)		RPD (≤ ~~50%~~ 30)
	7	8	
QQQ	41	43	5
AA	0.57	0.60	5
PPP	0.77	0.77	0
S	2.8	2.9	4
C	15	14	7

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LDC #: 31175B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$ — A_x = Area of Compound — A_{is} = Area of associated internal standard

average RRF = sum of the RRFs/number of standards — C_x = Concentration of compound, — C_{is} = Concentration of internal standard

%RSD = 100 * (S/X) — S= Standard deviation of the RRFs, — X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/7/2013	Trichloroethene (IS1)	0.343	0.343	0.354	0.353	11.52	11.49
	TO05		Tetrachloroethene (IS2)	See LR					

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31175B1

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Reviewer: BR

2nd Reviewer:

Method: GCMS Volatiles (EPA SW 846 Method 8260B)

Calibration Date	Instrument	Compound	Standard	(Y) Response Ratio	(X) Concentration Ratio	CF
10/7/2013	TO05	Tetrachloroethene	1	0.00670	0.0300	0.2234
			2	0.01006	0.0500	0.2012
			3	0.03375	0.1000	0.3375
			4	0.16396	0.5000	0.3279
			5	0.29782	1.0000	0.2978
			6	0.68861	2.0000	0.3443
			7	0.99140	3.0000	0.3305
			8	1.46119	4.0000	0.3653
			9	1.74473	5.0000	0.3489
			10	3.52438	10.0000	0.3524
					Ave	0.3129

Regression Output		*Calculated*	*Reported*
Constant	c =	*-1.7272E-02*	*-0.005410*
Std Err of Y Est			
R Squared	r2 =	*0.9992*	*0.9992*
Degrees of Freedom			
X Coefficient(s)	m =	*0.3542*	*0.3496*
Std Err of Coef.			
Correlation Coefficient		*0.9996*	
Coefficient of Determination (r^2)		*0.9992*	*0.9992*

LDC#: 31175B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RLQ364	12/17/2013	Trichloroethene (IS1)	0.354	0.332	0.332	6.2	6.2
			Tetrachloroethene (IS2)	10.000	8.122	8.121	18.8	18.8
2	RLQ403	12/18/2013	Trichloroethene (IS1)	0.354	0.311	0.311	12.1	12.0
			Tetrachloroethene (IS2)	10.000	7.681	7.680	23.2	23.2

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.18	102	102	0
1,2-Dichloroethane-d4	↓	10.14	102	102	0
Toluene-d8		9.68	96.8	96.8	0
Bromofluorobenzene		10.58	106	106	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 34758I

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 19/20

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
~~1,1-Dichloroethene~~ AA	10.0	10.0	0	7.66	7.44	77	77	74	74	3	3
Trichloroethene	↓	↓	↓	9.32	9.69	93	93	97	97	4	3.9
~~Benzene~~											
~~Toluene~~											
~~Chlorobenzene~~											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W | LCD1W

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
~~1,1-Dichloroethene~~ AA	10.0	10.0	7.80	7.63	78	78	76	76	2	2.2
Trichloroethene	↓	↓	9.41	9.51	94	94	95	95	1	1.1
~~Benzene~~										
Toluene										
~~Chlorobenzene~~										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B7

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example: S = 0.16 ug/L

Sample I.D. 1, 5:

Conc. = $\frac{(8575)(10)(\quad)(\quad)}{(1514683)(0.354)(\quad)(\quad)}$

= 0.1599 30779 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 11, 2013
LDC Report Date:	January 27, 2014
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L101

Sample Identification

24-IW21-121113

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity and EPA Method 300.0 Sulfate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample 121113-ER-01 was identified as an equipment rinsate. No contaminant concentrations were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
121113-ER-01	12/11/13	Sulfate	0.252 mg/L	All samples in SDG 13L101

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the LOQ and above the DL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13L101	All analytes reported below the LOQ and above the DL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Data Qualification Summary - SDG 13L101

SDG	Sample	Analyte	Flag	A or P	Reason
13L101	24-IW21-121113	All analytes reported below the LOQ and above the DL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

LDC #: 31175B6
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/21/14
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Alkalinity (SM2320B), Sulfate (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 ~~12/12/13~~
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/DUP
VI.	Duplicates	A	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	SW	ER=8

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	~~24-EW32-121213~~	11	MB	21		31	
2	24-TW-41-121213	12		22		32	
3	24-TW-11-121213	13		23		33	
4	~~24-EW11-121213~~	14		24		34	
5	24-IW21-121113**	15		25		35	
6	~~24-BB76-121113~~	16		26		36	
7	121113-SB-01	17		27		37	
8	121113-ER-01	18		28		38	
9	24-EW11-121213MS	19		29		39	
10	~~24-EW11-121213DUP~~	20		30		40	

Notes:

LDC #: 31175B6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: MM
2nd reviewer: CV

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-8	AQ	pH TDS Cl F NO_3 NO_2 (SO_4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
~9,10	AQ	pH TDS Cl F NO_3 NO_2 (SO_4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 31175B6

VALIDATION FINDINGS CHECKLIST

Reviewer: MY
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See cover

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)	✓			
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 31175B6

VALIDATION FINDINGS CHECKLIST

Reviewer: MY
2nd Reviewer: JL

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 31175B6

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 12/11/13 Soil factor applied
Field blank type: (circle one) Field Blank / Rinsate / Other: ER Associated Samples: ~~5~~ (>5X)

Analyte	Blank ID	Blank ID	Action Limit	Sample Identification									
	8												
SO4	0.252		1.26										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31175B6

Validatin Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of SO4 was recalculated.Calibration date: 12/3/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found} \times 100}{\text{True}}$$

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis		Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	SO4	s1	0.05	0.838	*0.999662*	0.999662	Y
		s2	0.1	1.489			
		s3	0.2	3.166			
		s4	0.5	6.281			
		s5	1	12.85			
		s6	2	26.28			
		s7	5	70.31			
		s8	10	154.8			
		s9	20	312.8			
ccv165 Calibration verification	SO4	5.0	4.827		96.5	96.5	Y
Calibration verification							
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: MY
2nd Reviewer: OR

METHOD: Inorganics, Method see cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	Blk	110.4	121	91	92	Y
9	Matrix spike sample	Sb	(SSR-SR) 210	200	105	105	↓
10	Duplicate sample	↓	402	399	1	1	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 31175B6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd reviewer: OV

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for 5 reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

$SO_4 = (0.637593 \times Area + 0.145049)$

$= (0.637593 \times 47.148 + 0.145049) = 3.15$ mg/L

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	C	SO_4	3.15	3.15	Y
		Alk	1190	1190	Y

Note:

RECALC.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 11, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L101

Sample Identification

24-IW21-121113
24-IW21-121113DL1
24-IW21-121113DL2

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

Sample 121113-ER-01 was identified as an equipment rinsate. No methane, ethane, or ethene contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
121113-ER-01	12/11/13	Methane	6.8 ug/L	All samples in SDG 13L101

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
24-IW21-121113	Methane Ethane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A
24-IW21-121113DL1	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L101	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
24-IW21-121113	Methane Ethane	X	A
24-IW21-121113DL1	All TCL compounds except Ethane	X	A
24-IW21-121113DL2	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13L101

SDG	Sample	Compound	Flag	A or P	Reason
13L101	24-IW21-121113	Methane Ethane	J (all detects) J (all detects)	A	Compound quantitation (exceeded range)
13L101	24-IW21-121113DL1	Methane	J (all detects)	A	Compound quantitation (exceeded range)
13L101	24-IW21-121113 24-IW21-121113DL1 24-IW21-121113DL2	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation
13L101	24-IW21-121113	Methane Ethane	X	A	Overall assessment of data
13L101	24-IW21-121113DL1	All TCL compounds except Ethane	X	A	Overall assessment of data
13L101	24-IW21-121113DL2	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13L101

No Sample Data Qualified in this SDG

LDC #: 31175B51
SDG #: 13L101
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR IV

Date: 1/28/14
Page: 1 of 1
Reviewer: RR
2nd Reviewer: [illegible]

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 ~~12/12/13~~
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	|(N)| CCV ≤20%
IV.	Blanks	A	~~Not reviewed for ADR validation.~~
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	~~A~~ SW	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	SW	~~SB = 13~~ EB = 14

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	~~24-EW32-121213~~	11	24-IW21-121113DL2**	21		31	~~MBLK~~ MBK1W
2	24-EW32-121213DL	12	~~24-BB76-121~~113	22		32	
3	24-EW32-121213DL2	13	121113-SB-01	23		33	
4	24-TW-41-121213	14	~~121113-ER-01~~	24		34	
5	24-TW-11-121213	15		25		35	
6	24-TW-11-121213DL	16		26		36	
7	24-EW11-121213	17		27		37	
8	~~24-EW11-121213DL~~	18		28		38	
9	24-IW21-121113**	19		29		39	
10	24-IW21-121113DL**	20		30		40	

Notes:

LDC #: 31175851

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? 6 %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✗	m	✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31175B57

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

LDC #: 31175B5

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/11/13
Field blank type: (circle one) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: _____
Associated Samples: 9 - 11 (>5x)

Compound	Blank ID	Blank ID	Sample Identification							
	14									
methane	6.8									
CRQL										

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/11/13
Field blank type: (circle one) Field Blank / Trip Blank/ Atmospheric Blank/ Ambient Blank
Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other: _____
Associated Samples: 14

Compound	Blank ID	Blank ID	Sample Identification							
	13		14							
methane	20		6.8/u							
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31175851

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: RR
2nd Reviewer:

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Ethane, Methane	exceeded calibration range	9	J det/A
	~~All except Ethane~~ ~~6x~~			
	Methane		10	

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175851

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Ethane, Methane	exceeded calibration range	9	~~R/A~~ X/A
	All except Ethane	dilution + x'd. calib. rang	10	
	All except Methane	dilution	11	

Comments: _____

OVRNew2.wpd

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: GC __X_____ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = 100 * (S/X)

Where:

A = Area of compound

C = Concentration of compound

S = Standard deviation of calibration factors

X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 3.4 std)	Recalculated (CF 3.4 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/11/2013	Methane	32131	32131	32355.3	32355.2	6.9	6.9
	GCT010								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer:

METHOD: GC x HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	FL17002A	12/17/2013 9:14	Methane	13.6	12.82	12.82	5	5
2	FL17016A	12/17/2013 12:05	Methane	13.6	12.84	12.84	5	5

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: ~~1 of 1~~ 2 of 2
Reviewer: BR
2nd Reviewer:

METHOD: GC__x___HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	FL17030A	12/17/2013 14:44	Methane	13.6	12.31	12.31	9	9
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175B51

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W | LCD1W

Compound	Spike Added (ug/L)		Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)	13.4	13.4	12.9	12.3	95	95	91	90.4	4	4.8
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175851

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

CH_4 = 11000 ug/L

Sample ID. 11 Compound Name methane

Concentration = (889763)(400) / 32355.3
= 10999.90419 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 11 through December 12, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L102

Sample Identification

24-BB80-121213
24-EW31-121113
24-TW-42-121113

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Samples 121113-ER-01 (from SDG 13L101) and 121213-ER-02 were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L102	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13L102

SDG	Sample	Compound	Flag	A or P	Reason
13L102	24-BB80-121213 24-EW31-121113 24-TW-42-121113	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13L102

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13L102

No Sample Data Qualified in this SDG

LDC #: 31175C1 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/28/14
SDG #: 13L102 ADR/IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: BR
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%, r²
IV.	Continuing calibration/ICV	A	|CV| CCV ≤ 25%
V.	Blanks	A	Not reviewed for ADR validation.
VI.	Surrogate spikes	N	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	A	Not reviewed for ADR validation. non L4 sample
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	ER = 9, 121113-ER-01 (132101)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~24-TW-14-121213~~	11	~~24-EW6-121113~~	21		31	MBLK1W
2	~~24-TW-14-121213-D~~	12	24-IW8-121113	22		32	MBLK2W
3	24-BB80-121213**	13	~~24-TW-25-121113~~	23		33	
4	~~24-BB63-121213~~	14	24-EW31-121113**	24		34	
5	24-BB38-121213	15	24-TW-42-121113**	25		35	
6	24-BB38-121213-D	16	~~24-EW29-121113MS~~	26		36	
7	24-TW-04-121213	17	~~24-EW29-121113MSD~~	27		37	
8	24-TW-16-121213	18		28		38	
9	121213-ER-02	19		29		39	
10	~~24-EW29-121113~~	20		30		40	

LDC #: 31759

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30%/15% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 31175C1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31175C1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 2
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	10/7/2013	Trichloroethene (IS1)	0.343	0.343	0.354	0.353	11.52	11.49
	TO05		Tetrachloroethene (IS2)	See LR					

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31175C1

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Reviewer: BR

2nd Reviewer:

Method: GCMS Volatiles (EPA SW 846 Method 8260B)

Calibration Date	Instrument	Compound	Standard	(Y) Response Ratio	(X) Concentration Ratio	CF
10/7/2013	TO05	Tetrachloroethene	1	0.00670	0.0300	0.2234
			2	0.01006	0.0500	0.2012
			3	0.03375	0.1000	0.3375
			4	0.16396	0.5000	0.3279
			5	0.29782	1.0000	0.2978
			6	0.68861	2.0000	0.3443
			7	0.99140	3.0000	0.3305
			8	1.46119	4.0000	0.3653
			9	1.74473	5.0000	0.3489
			10	3.52438	10.0000	0.3524
					Ave	0.3129

Regression Output		*Calculated*	*Reported*
Constant	c =	*-1.7272E-02*	*-0.005410*
Std Err of Y Est			
R Squared	r2 =	*0.9992*	*0.9992*
Degrees of Freedom			
X Coefficient(s)	m =	*0.3542*	*0.3496*
Std Err of Coef.			
Correlation Coefficient		*0.9996*	
Coefficient of Determination (r^2)		*0.9992*	*0.9992*

LDC#: 31175C1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RLQ329	12/16/2013	Trichloroethene (IS1)	0.354	0.361	0.361	2.0	2.1
			Tetrachloroethene (IS2)	10.000	8.816	8.815	11.8	11.8
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175C1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.4	104	104	0
1,2-Dichloroethane-d4	↓	10.4	104	104	0
Toluene-d8		9.80	98.0	98.0	0
Bromofluorobenzene		10.1	101	101	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 31175C1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD sample: 16/17

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
~~1,1-Dichloroethene~~ AA	10.0	10.0	0	8.45	8.61	84	84.5	86	86	2	2
Trichloroethene			0.174	10.3	10.1	101	101	100	99.3	1	2
~~Benzene~~											
~~Toluene~~											
~~Chlorobenzene~~											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175C1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: <

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W | LCD1W

Compound	Spike Added (µg/L)		Spiked Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
1,~~1-Dichloroethene~~ AA	10.0	10.0	7.80	7.63	78	78	76	76	2	2
Trichloroethene	↓	↓	9.41	9.51	94	94	95	95	1	1
~~Benzene~~										
Toluene										
~~Chlorobenzene~~										

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175C1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

C = 2.3 ug/L

Sample I.D. 3, C:

Conc. = $\frac{(93436)(10)(\quad)(\quad)}{(1510375)(0.270)(\quad)(\quad)}$

= 2.291214154 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 11 through December 12, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L103

Sample Identification

24-TW-37-121113
24-EW4-121113
24-TW-48-121213
24-TW-48-121213DL

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) and 25.0% for all other compounds.

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample 121313-TB-01 was identified as a trip blank. No volatile contaminants were found.

Samples 121113-ER-01 (from SDG 13L101) and 121213-ER-02 (from SDG 13L102) were identified as equipment rinsates. No volatile contaminants were found.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
24-TW-48-121213	cis-1,2-Dichloroethene Vinyl chloride	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L103	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
24-TW-48-121213	cis-1,2-Dichloroethene Vinyl chloride	X	A
24-TW-48-121213DL	All TCL compounds except cis-1,2-Dichloroethene Vinyl chloride	X	A

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Volatiles - Data Qualification Summary - SDG 13L103

SDG	Sample	Compound	Flag	A or P	Reason
13L103	24-TW-48-121213	cis-1,2-Dichloroethene Vinyl chloride	J (all detects) J (all detects)	A	Compound quantitation (exceeded range)
13L103	24-TW-37-121113 24-EW4-121113 24-TW-48-121213 24-TW-48-121213DL	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation
13L103	24-TW-48-121213	cis-1,2-Dichloroethene Vinyl chloride	X	A	Overall assessment of data
13L103	24-TW-48-121213DL	All TCL compounds except cis-1,2-Dichloroethene Vinyl chloride	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Volatiles - Laboratory Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Volatiles - Field Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

LDC #: 31175D1
SDG #: 13L103
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/28/14
Page: 1 of 1
Reviewer: KR
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/13 - 12/12/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|W| |CW| ≤ 25%
V.	Blanks	A	Not ~~reviewed for ADR validation~~.
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. Client spec.
VIII.	Laboratory control samples	A	Not ~~reviewed for ADR validation~~. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not ~~reviewed for ADR validation~~.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/CRQLs	SW	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	SW	Not ~~reviewed for ADR validation~~.
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 17 ER: 121113-ER-01 (13L101) 121213-ER-02 (13L102)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	24-TW-37-121113**	11	24-TW-48-121213**	21		31	MBLKW
2	24-EW4-121113**	12	24-TW-48-121213DL**	22		32	
3	~~24-TW-50-12113~~	13	~~24-TW-47-121213~~	23		33	
4	24-TW-26-121113	14	24-TW-47-121213DL	24		34	
5	24-TW-43-121113	15	24-EW11-121213-D	25		35	
6	24-TW-36-121113	16	24-EW11-121213-DDL	26		36	
7	24-EW28-121213	17	~~121313-TB-01~~	27		37	
8	24-TW-28-121213	18		28		38	
9	24-TW-49-121213	19		29		39	
10	24-~~EW12-121213~~	20		30		40	

LDC #: 31175 01

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?		✓		
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30%/~~15%~~ 15% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 2~~0~~5% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

LDC #: 31175D1

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.		✓		

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31175D1

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Page: 1 of 1
Reviewer: BR
2nd Reviewer: ✓

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Compound	Finding	Associated Samples	Qualifications
		DDQ, C	exceeded calibration range	11	J det/A
		~~All except above~~ BR			

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175 D1 ~~BF~~ KM

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.
(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Compound Name	Finding	Associated Samples	Qualifications
		DDE, C	exceeded calibration range	11	~~R/A~~ KM X/A
					↓
		All except above	dilution	12	↓

Comments: _____

OVR_BR.wpd

LDC #: 31175D1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound,
S= Standard deviation of the RRFs,

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 10 std)	Recalculated RRF (RRF 10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/28/2013	cis-1,2-Dichloroethene (IS1	0.580	0.580	0.575	0.575	4.54	4.56
	E2		Tetrachloroethene (IS2	0.580	0.580	0.554	0.554	4.53	4.53

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 31175D1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	RLG307	12/17/2013	cis-1,2-Dichloroethene (IS1)	0.575	0.533	0.533	7.3	7.3
			Tetrachloroethene (IS2)	0.554	0.517	0.517	6.7	6.7
2								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 311750J

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: BR
2nd reviewer: C

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	10.00	10.36	104	104	0
1,2-Dichloroethane-d4		10.71	107	107	0
Toluene-d8		10.01	100	100	0
Bromofluorobenzene		10.02	100	100	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 31175D1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS1W | LCD1W

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalc
~~1,1-Dichloroethene~~ AA	10.0	10.0	8.82	8.87	88	88	89	89	1	1
Trichloroethene	↓	↓	8.51	8.83	85	85	88	88	4	3.7
~~Benzene~~	— Ba									
Toluene	— M									
Chlorobenzene	— Ar									

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175D1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

C = 0.91

Sample I.D. 1, C:

Conc. = $\frac{(29534)(10)(\quad)(\quad)}{(482226)(0.671)(\quad)(\quad)}$

= 0.91 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 12, 2013
LDC Report Date:	January 27, 2014
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L103

Sample Identification

24-TW-48-121213

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity and EPA Method 300.0 Sulfate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Sample 121214-ER-02 (from SDG 13L101) was identified as an equipment rinsate. No contaminant concentrations were found with the following exceptions:

Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
121113-ER-02	12/12/13	Sulfate	0.250 mg/L	All samples in SDG 13L103

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the LOQ and above the DL were qualified as follows:

Sample	Analyte	Flag	A or P
All samples in SDG 13L103	All analytes reported below the LOQ and above the DL.	J (all detects)	A

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Data Qualification Summary - SDG 13L103

SDG	Sample	Analyte	Flag	A or P	Reason
13L103	24-TW-48-121213	All analytes reported below the LOQ and above the DL.	J (all detects)	A	Sample result verification

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Wet Chemistry - Field Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

LDC #: 31175D6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/14
SDG #: 13L103 ADR/IV Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320B), Sulfate (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. 7 CS.
VI.	Duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Sample result verification	A	Not reviewed for ADR validation.
IX.	Overall assessment of data	A	Not reviewed for ADR validation.
X.	Field duplicates	N	
XI	Field blanks	SW	ER = 121213-ER-02 (SDG 13L101)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	24-~~TW-28-121213~~	11	MB	21		31	
2	24-EW12-121213	12		22		32	
3	24-TW-48-121213**	13		23		33	
4	~~24-TW-47-121218~~	14		24		34	
5	24-EW11-121213-D	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31175D6

VALIDATION FINDINGS CHECKLIST

Reviewer: MH
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See Cover

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)	✓			
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.			✓	
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 31175 D6

VALIDATION FINDINGS CHECKLIST

Reviewer: MY
2nd Reviewer: CN

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 31175D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: MM
2nd reviewer: CN

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-5	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____

Comments:

LDC #: 31175D6

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer:
2nd Reviewer:

METHOD: Inorganics, EPA Method See Cover
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?
Blank units: mg/L **Associated sample units:** mg/L
Sampling date: 12/12/13 Soil factor applied
Field blank type: (circle one) Field Blank / Rinsate / Other: ER Associated Samples: 3 (>5X)

Analyte	Blank ID	Action Limit	Sample Identification									
	121213-ER-02											
SO4	0.250	1.25										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31175 D6

Validatin Findings Worksheet
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of SO4 was recalculated.Calibration date: 12/3/13

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found X 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of analysis		Standard	Conc. (mg/L)	Area	Recalculated r or r^2	Reported r or r^2	Acceptable (Y/N)
Initial calibration	SO4	s1	0.05	0.838	*0.999662*	0.999662	Y
		s2	0.1	1.489			
		s3	0.2	3.166			
		s4	0.5	6.281			
		s5	1	12.85			
		s6	2	26.28			
		s7	5	70.31			
		s8	10	154.8			
		s9	20	312.8			
CCV67 Calibration verification	SO4	5.0	4.834		96.7	96.7	Y
Calibration verification							
Calibration verification							

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: MY
2nd Reviewer: OR

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	SO4	4.89	5	98	98	Y
MS	Matrix spike sample		(SSR-SR)				
↓	Duplicate sample						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 31175B6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for 3 reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

$$Alk = \frac{V_{titrat} \times N_{titrat} \times 50000}{25} = \frac{25.56 \times 0.02 \times 50000}{25} = 1022\ mg/L$$

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	3	SO4	131	131	Y
		Alk	1020	1020	✓

Note:

RECALC.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, IR Sites 21 & 24
Collection Date:	December 12, 2013
LDC Report Date:	January 28, 2014
Matrix:	Water
Parameters:	Methane, Ethane, & Ethene
Validation Level:	EPA Level IV
Laboratory:	EMAX Laboratories, Inc.
Sample Delivery Group (SDG):	13L103

Sample Identification

24-TW-48-121213
24-TW-48-121213DL

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Methane, Ethane, and Ethene.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

Retention time windows were evaluated and considered technically acceptable.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No methane, ethane, or ethene contaminants were found in the method blanks.

Sample 121213-ER-01 (from SDG 13L102) was identified as an equipment rinsate. No methane, ethane, or ethene contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
121213-ER-01	12/12/13	Methane	0.24 ug/L	All samples in SDG 13L103

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly (>5X blank contaminants) than the concentrations found in the associated field blanks.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
24-TW-48-121213	Methane	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 13L103	All compounds reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
24-TW-48-121213	Methane	X	A

Sample	Compound	Flag	A or P
24-TW-48-121213DL	All TCL compounds except Methane	X	A

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Data Qualification Summary - SDG 13L103

SDG	Sample	Compound	Flag	A or P	Reason
13L103	24-TW-48-121213	Methane	J (all detects) J (all detects)	A	Compound quantitation (exceeded range)
13L103	24-TW-48-121213 24-TW-48-121213DL	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation
13L103	24-TW-48-121213	Methane	X	A	Overall assessment of data
13L103	24-TW-48-121213DL	All TCL compounds except Methane	X	A	Overall assessment of data

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

Treasure Island, IR Sites 21 & 24
Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG 13L103

No Sample Data Qualified in this SDG

LDC #: 31175D51
SDG #: 13L103
Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/28/14
Page: 1 of 1
Reviewer: KR
2nd Reviewer: [illegible]

METHOD: GC Methane, Ethane, & Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/13
II	Initial calibration	A	RSD ≤20%
III.	Calibration verification/ICV	A	ICV/CCV ≤20%
IV.	Blanks	A	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound Quantitation and CRQLs	SW	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	SW	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	SW	121213-ER-01 (from SDG 13L102)

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Water

1	~~24-TW-28-121213~~	11		21		31	MBLK/W
2	24-TW-28-121213DL	12		22		32	
3	24-EW12-121213	13		23		33	
4	~~24-EW12-121213DL~~	14		24		34	
5	24-TW-48-121213**	15		25		35	
6	24-TW-48-121213DL**	16		26		36	
7	~~24-TW-47-121213~~	17		27		37	
8	24-TW-47-121213DL	18		28		38	
9	24-EW11-121213-D	19		29		39	
10	24-EW11-121213-DDL	20		30		40	

Notes:

LDC #: 31175051

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: e

Method: X GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or __%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31175051

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: APL
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC
~~Y~~ N N/A Field blanks were identified in this SDG.
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/12/13
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples: All (~~N.D.~~) (>5x)

Compound	Blank ID	Sample Identification								
	121213-ER-01 (SDG: 13L1058)									
Methane	0.24									
CRQL										

Blank units:_____ **Associated sample units:**_____
Sampling date:_____
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	5	J det/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: BK
2nd Reviewer: [illegible]

METHOD: X **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	Methane	exceeded calibration range	5	~~R/A~~ X/A
	All except Methane	dilution	6	↓

Comments: _____

OVRNew2.wpd

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: K

METHOD: GC __X_____ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 3.4 std)	Recalculated (CF 3.4 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/11/2013	Methane	32131	32131	32355.3	32355.2	6.9	6.9
	GCT010								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC x HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc/CF	Reported Conc/CF	Recalculated Conc/CF	Reported % D	Recalculated %D
1	FL20002A	12/20/2013 8:14	Methane	13.6	12.97	12.97	4	4
2	FL20018A	12/20/2013 11:15	Methane	13.6	12.53	12.53	8	8

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175D51

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: BR

2nd Reviewer: [illegible]

METHOD: X GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; LCS = Laboratory Control Sample; SC = Sample concentration; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS1W / LCD1W

Compound	Spike Added (µg/L)		Spike Sample Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)	13.6	13.6	13.13	~~13.0~~ 12.97	97	96.5	95	95	1	1.2
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31175051

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: ✓

METHOD: ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

DF = 800
CH_4 = 10000 ug/L

Sample ID. 6 Compound Name Methane

Concentration = (417530)(800) / (32355.3)
= 10323.6255 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126
ATTN: Mrs. Jordy Bjorkman

March 5, 2014

SUBJECT: Treasure Island, Basewide Monitoring, Data Validation

Dear Mrs. Bjorkman,

Enclosed is the final validation report for the fractions listed below. This SDG was received on January 21, 2014. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 31199:

SDG #	Fraction
P1305675	Volatiles, Fixed Gases, Helium, Hydrogen Sulfide

The data validation was performed under EPA Level III & IV validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact us if you have any questions.

Sincerely,

Andrew Kong
Project Manager/Senior Chemist

439 Pages-SF

Attachment 1

ADR/IV (Client Select)

LDC #31199 (Trevet/Accord-San Diego / Treasure Island, Basewide Monitoring)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (TO-15)		Fixed Gases (3C)		He (3C M)		H_2S (D5504)																															
Matrix:	AirWater/Soil			A	S	A	S	A	S	A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	P1305675	01/21/14	02/11/14	6	0	3	0	5	0	3	0																														
A	P1305675	01/21/14	02/11/14	1	0	1	0	1	0	1	0																														
Total	A/AK			7	0	4	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21

Shaded cells indicate Level IV validation (all other cells are Level III validation) These sample counts do not include MS/MSD and DUPs

31199ST.wpd

Data Validation Report
Treasure Island, Basewide Monitoring

SDG: P1305675

Prepared for

Trevet
9888 Carroll Centre Road S-228
San Diego, CA 92126

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave. West, Suite 220
Carlsbad, California 92010

February 28, 2014

INTRODUCTION

This Data Validation Report (DVR) presents EPA Level III and EPA Level IV data validation results for samples collected during the December 2013 sampling period. Data validation was performed in accordance with US EPA *Contract Laboratory Program National Functional Guidelines* (CLPNFG) *for Superfund Organic Methods Data Review* (June 2008) and US EPA CLPNFG *for Inorganic Superfund Data Review* (January 2010). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15
Fixed Gases by EPA Method 3C Modified
Hydrogen Sulfide by American Society for Testing and Materials (ASTM) Method D 5504-8

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. EPA Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which EPA Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to EPA Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, surrogates, internal standards, laboratory duplicates (DUP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), method blanks, canister blanks, trip blanks and field duplicates. Approximately 14 percent of samples were subjected to EPA Level IV evaluation as indicated in Attachment 1, which comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met QC criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

All criteria for the initial calibration verifications and continuing calibration of each method were met.

IV. Blanks

Method blanks were performed at the required frequencies. No contaminant concentrations were detected in the method blanks or canister blanks.

V. Surrogate Spikes

Although surrogates were not required by the methods, surrogate analysis was performed by the laboratory for VOCs. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the methods.

VII. Laboratory Duplicates Sample

Laboratory duplicates (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards

All internal standard areas and retention times were within QC limits.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG P1305675	All compounds reported as detected below the LOQ.	J (all detects)	A

XI. Field Duplicate Samples

One field duplicate pair was collected and analyzed for VOCs, fixed gases and hydrogen sulfide. All RPDs were within QC limits. The field duplicate result comparisons are provided in Enclosure I.

XII. Field Blank Samples

One trip blank was collected and analyzed for VOCs. The trip blank had detections for toluene. The associated sample results were qualified as non-detected (U) due to trip blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the trip blanks were not qualified. The trip blank outlier reports are presented in Enclosure I.

XIII. Overall Assessment of Data

No data associated with this sampling event were rejected. The overall assessment of QA/QC data review by automated and manual validation of this sampling event met project requirements and analytical completeness levels with the exceptions noted in the above sections. All data are deemed useable for the intended use.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Dec-2013	21-SG-04	P1305675-001	N	Gen Prep	3C Modified	3
19-Dec-2013	21-SG-04	P1305675-001	N	Gen Prep	ASTM D 5504-08	3
19-Dec-2013	21-SG-04	P1305675-001	N	Gen Prep	TO-15	3
19-Dec-2013	IR21-TB-121913	P1305675-002	TB	Gen Prep	TO-15	3
19-Dec-2013	21-SG-31	P1305675-003	N	Gen Prep	3C Modified	3
19-Dec-2013	21-SG-31	P1305675-003	N	Gen Prep	TO-15	3
19-Dec-2013	21-SG-27	P1305675-004	N	Gen Prep	3C Modified	3
19-Dec-2013	21-SG-27	P1305675-004	N	Gen Prep	ASTM D 5504-08	3
19-Dec-2013	21-SG-27	P1305675-004	N	Gen Prep	TO-15	3
19-Dec-2013	21-SG-27DUP	P1305675-004DUP	DUP	Gen Prep	TO-15	3
19-Dec-2013	21-SG-27-DUP	P1305675-005	FD	Gen Prep	3C Modified	3
19-Dec-2013	21-SG-27-DUP	P1305675-005	FD	Gen Prep	ASTM D 5504-08	3
19-Dec-2013	21-SG-27-DUP	P1305675-005	FD	Gen Prep	TO-15	3
19-Dec-2013	21-SG-30	P1305675-006	N	Gen Prep	3C Modified	4
19-Dec-2013	21-SG-30	P1305675-006	N	Gen Prep	ASTM D 5504-08	4
19-Dec-2013	21-SG-30	P1305675-006	N	Gen Prep	TO-15	4
19-Dec-2013	21-SG-05	P1305675-007	N	Gen Prep	3C Modified	3
19-Dec-2013	21-SG-05	P1305675-007	N	Gen Prep	TO-15	3

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: P1305675 **Laboratory: CAS_S**

EDD Filename: P1305675 **eQAPP Name: A111_TI Basewide**

Method Category: **VOA**

Method: **TO-15** ***Matrix:*** **AIR**

Sample ID: **21-SG-05** ***Collected:*** **12/19/2013 4:31:00** ***Analysis Type:*** **RES** ***Dilution:*** **96.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	46	J	39	LOD	48	LOQ	ug/m3	J	RI

Sample ID: **21-SG-27** ***Collected:*** **12/19/2013 2:26:00** ***Analysis Type:*** **RES** ***Dilution:*** **21.29**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	6.8	J	9.2	LOD	11	LOQ	ug/m3	J	RI

Sample ID: **21-SG-27-DUP** ***Collected:*** **12/19/2013 2:26:00** ***Analysis Type:*** **RES** ***Dilution:*** **20.71**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CIS-1,2-DICHLOROETHENE	7.0	J	8.9	LOD	10	LOQ	ug/m3	J	RI

Sample ID: **21-SG-31** ***Collected:*** **12/19/2013 12:10:00** ***Analysis Type:*** **RES** ***Dilution:*** **1.50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	0.34	J	0.62	LOD	0.75	LOQ	ug/m3	J	RI
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.43	J	0.65	LOD	0.75	LOQ	ug/m3	J	RI
CARBON TETRACHLORIDE	0.33	J	0.63	LOD	0.75	LOQ	ug/m3	J	RI
TOLUENE	0.70	J	0.63	LOD	0.75	LOQ	ug/m3	U	Tb

Sample ID: **IR21-TB-121913** ***Collected:*** **12/19/2013 10:30:00** ***Analysis Type:*** **RES** ***Dilution:*** **1.00**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOLUENE	0.31	J	0.42	LOD	0.50	LOQ	ug/m3	J	RI

* denotes a non-reportable result

Project Name and Number: A111 - Treasure Island Basewide Monitoring

Data Qualifier Summary

Lab Reporting Batch ID: P1305675 **Laboratory: CAS_S**

EDD Filename: P1305675 **eQAPP Name: A111_TI Basewide**

Reason Code Legend

Reason Code	*Description*
RI	Reporting Limit Trace Value
Tb	Trip Blank Contamination

* denotes a non-reportable result

Project Name and Number: A111 - Treasure Island Basewide Monitoring

Enclosure I

EPA Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

P1305675

Trip Blank Outlier Report

Lab Reporting Batch ID: P1305675 **Laboratory: CAS_S**

EDD Filename: P1305675 **eQAPP Name: A111_TI Basewide**

Method: **TO-15**
Matrix: **AIR**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
IR21-TB-121913(RES)	12/19/2013 10:30:00 AM	TOLUENE	0.31 ug/m3	21-SG-04 21-SG-05 21-SG-27 21-SG-27-DUP 21-SG-30 21-SG-31

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
21-SG-31(RES)	TOLUENE	0.70 ug/m3	0.75U ug/m3

Reporting Limit Outliers

Lab Reporting Batch ID: P1305675 **Laboratory: CAS_S**

EDD Filename: P1305675 **eQAPP Name: A111_TI Basewide**

Method: **TO-15**

Matrix: **AIR**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
21-SG-05	1,1,1-TRICHLOROETHANE	J	46	48	LOQ	ug/m3	J (all detects)
21-SG-27	CIS-1,2-DICHLOROETHENE	J	6.8	11	LOQ	ug/m3	J (all detects)
21-SG-27-DUP	CIS-1,2-DICHLOROETHENE	J	7.0	10	LOQ	ug/m3	J (all detects)
21-SG-31	1,1,1-TRICHLOROETHANE 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE CARBON TETRACHLORIDE TOLUENE	J J J J	0.34 0.43 0.33 0.70	0.75 0.75 0.75 0.75	LOQ LOQ LOQ LOQ	ug/m3 ug/m3 ug/m3 ug/m3	J (all detects)
IR21-TB-121913	TOLUENE	J	0.31	0.50	LOQ	ug/m3	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: P1305675 **Laboratory: CAS_S**

EDD Filename: P1305675 **eQAPP Name: A111_TI Basewide**

Method: 3C Modified
Matrix: AIR

Analyte	Concentration (ppmV)		Sample RPD	eQAPP RPD	Flag
	21-SG-27	21-SG-27-DUP			
Carbon Dioxide	1950	2050	5	50.00	No Qualifiers Applied
OXYGEN	211000	211000	0	50.00	

Method: TO-15
Matrix: AIR

Analyte	Concentration (ug/m3)		Sample RPD	eQAPP RPD	Flag
	21-SG-27	21-SG-27-DUP			
1,1,1-TRICHLOROETHANE	34	35	3	50.00	No Qualifiers Applied
CHLOROFORM	240	240	0	50.00	
CIS-1,2-DICHLOROETHENE	6.8	7.0	3	50.00	
TETRACHLOROETHYLENE	1800	1800	0	50.00	
TRICHLOROETHENE	690	690	0	50.00	

LDC #: 31199A48
SDG #: P1305675
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/30/14
Page: 1 of 1
Reviewer: KR
2nd Reviewer: SM

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/~~37~~ 13 KR
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	|ave| CCV ≤ 30%
V.	Blanks	N	Not reviewed for ADR validation.
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	Not reviewed for ADR validation.
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)		Not reviewed for ADR validation.
XIV.	System performance		Not reviewed for ADR validation.
XV.	Overall assessment of data		Not reviewed for ADR validation.
XVI.	Field duplicates	—	FD = 4 + 5
XVII.	Field blanks	—	TB = 2

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	21-SG-04	11		21		31	
2	IR21-TB-121913	12		22		32	
3	21-SG-31	13		23		33	
4	21-SG-27	14		24		34	
5	21-SG-27-DUP	15		25		35	
6	21-SG-30**	16		26		36	
7	21-SG-05	17		27		37	
8	21-SG-27DUP	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31199A49
SDG #: P1305675
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/30/14
Page: 1 of 1
Reviewer: BK
2nd Reviewer: SM

METHOD: GC Hydrogen Sulfide (ASTM D 5504-08)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	|CV| |CCV| ≤ 20%
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data		Not reviewed for ADR validation.
XII.	Field duplicates		FD = 2 + 3
XIII.	Field blanks		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Air

1	21-SG-04	11		21		31	
2	21-SG-27	12		22		32	
3	21-SG-27-DUP	13		23		33	
4	21-SG-30**	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31199A50
SDG #: P1305675
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 1/20/14
Page: 1 of 1
Reviewer: BR
2nd Reviewer: SM

METHOD: GC Helium (EPA Method 3C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data	✓	Not reviewed for ADR validation.
XII.	Field duplicates	—	FD = 3 7 4
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

A ✓

1	21-SG-04	11		21		31	P131230-MB
2	21-SG-31	12		22		32	
3	21-SG-27	13		23		33	
4	21-SG-27-DUP	14		24		34	
5	21-SG-30**	15		25		35	
6	21-SG-05	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31199A51

SDG #: P1305675

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/30/14

Page: 1 of 1

Reviewer: SR

2nd Reviewer: SM

METHOD: GC Fixed Gases (~~SOP VOA EPA~~3C)

EPA Method 3C Modified

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20%
IV.	Blanks	N	Not reviewed for ADR validation.
V	Surrogate recovery		Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VII.	Laboratory control samples		Not reviewed for ADR validation.
VIII.	Target compound identification		Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs		Not reviewed for ADR validation.
X.	System Performance		Not reviewed for ADR validation.
XI.	Overall assessment of data	✓	Not reviewed for ADR validation.
XII.	Field duplicates	—	FD = 2 + 3
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	21-SG-04	11		21		31	P131230-MB
2	21-SG-27	12		22		32	
3	21-SG-27-DUP	13		23		33	
4	21-SG-30**	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Enclosure II

EPA Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, Basewide Monitoring
Collection Date:	December 19, 2013
LDC Report Date:	February 6, 2014
Matrix:	Air
Parameters:	Volatiles
Validation Level:	EPA Level IV
Laboratory:	ALS Environmental
Sample Delivery Group (SDG):	P1305675

Sample Identification

21-SG-30

Introduction

This data review covers one air sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method TO-15 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The canisters were properly pressurized and handled.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 24 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0%.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

V. Blanks

Method blank analyses were performed at the required frequency. No volatile contaminants were found in the method blanks.

Canister blank analyses were performed for every sample canister. No volatile contaminants were found in the canister blanks.

Sample IR21-TB-121913 was identified as a trip blank. No volatile contaminants were found with the following exceptions:

Blank ID	Sampling Date	Compound	Concentration	Associated Samples
IR21-TB-121913	12/19/13	Toluene	0.31 ug/m³	All samples in SDG P1305675

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VI. Surrogate Spikes

Although surrogates were not required by the method, surrogate analysis was performed by the laboratory. Surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates/Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

Duplicate (DUP) sample analyses were analyzed at the required frequency. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG P1305675	All compounds reported below the LOQ.	J (all detects)	A

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, Basewide Monitoring
Volatiles - Data Qualification Summary - SDG P1305675

SDG	Sample	Compound	Flag	A or P	Reason
P1305675	21-SG-30	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, Basewide Monitoring
Volatiles - Laboratory Blank Data Qualification Summary - SDG P1305675

No Sample Data Qualified in this SDG

Treasure Island, Basewide Monitoring
Volatiles - Field Blank Data Qualification Summary - SDG P1305675

No Sample Data Qualified in this SDG

LDC #: 31199A48
SDG #: P1305675
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/30/14
Page: 1 of 1
Reviewer: BK
2nd Reviewer: A

METHOD: GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RSD ≤ 30%
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 30%
V.	Blanks	A	~~Not reviewed for ADR validation~~. Canister blk = A
VI.	Surrogate spikes	~~N~~ A	
VII.	Matrix spike/Matrix spike duplicates / Lab Dup	N / A	
VIII.	Laboratory control samples	A	~~Not reviewed for ADR validation~~. LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	~~Not reviewed for ADR validation~~.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Tentitatively identified compounds (TICs)	N	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not ~~reviewed for ADR validation~~.
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	TB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

Air

1 1	~~21-SG-04~~	11		21		31 1	P140106-MB
2 1	IR21-TB-121913	12		22		32 2	P140107-MB
3 2	21-SG-31	13		23		33	
4 1	21-SG-27	14		24		34	
5 1	~~21-SG-27-DUP~~	15		25		35	
6 1	21-SG-30**	16		26		36	
7 1	~~21-SG-05~~	17		27		37	
8 1	~~21-SG-27DUP~~	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 31199A48

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: Volatiles (EPA Method TO-15)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Canister pressure criteria was met.	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31199A48

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within +/-40% from the associated calibration standard?	✓			
Were retention times within +/- 20.0 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		✓		
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31199A48

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/m3 **Associated sample units:** ug/m3
Sampling date: 12/19/13
Field blank type: (circle one) Field Blank / Rinsate / Other: TB Associated Samples: 6 (ND)

Compound	Blank ID	Sample Identification								
	2									
CC	0.31									
CRQL										

Blank units:_____ **Associated sample units:**_____
Sampling date:_____
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 31199A48

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 50 std)	Recalculated RRF (RRF 50 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/19/2013	Chloroform (IS1)	2.311	2.311	2.651	2.651	15.17	15.17
	MS08		Trichloroethene (IS2)	0.347	0.347	0.387	0.387	13.07	12.96
			Tetrachloroethene (IS3)	1.042	1.042	1.128	1.128	10.60	10.61

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199A48

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of Compound
C_x = Concentration of compound
S= Standard deviation of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard
X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 500 std)	Recalculated RRF (RRF 500 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/19/2013	1,1,1,2-Tetrachloroethane (IS	0.620	0.620	0.700	0.700	14.82	14.83
	MS08								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199A48

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
Ax = Area of compound,
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported % D	Recalculated %D
1	01061402	1/6/2014	Chloroform (IS1)	2.651	2.507	2.507	5.4	5.4
			Trichloroethene (IS2)	0.387	0.340	0.340	12.1	12.0
			Tetrachloroethene (IS3)	1.128	0.888	0.888	21.3	21.3
2	01061403	1/6/2014	1,1,1,2-Tetrachloroethane (IS	0.700	0.551	0.551	21.3	21.3

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199A48

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BK
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA Method TO-15)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example: S = 180 ug/m3

Sample I.D. 6 , S :

Conc. = $\frac{(319386)(12.5)(1.45)(600)}{(858692)(0.387)(100)(\quad)}$

= 175.4003123 ug/m3

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, Basewide Monitoring
Collection Date:	December 19, 2013
LDC Report Date:	February 6, 2014
Matrix:	Air
Parameters:	Fixed Gases
Validation Level:	EPA Level IV
Laboratory:	ALS Environmental
Sample Delivery Group (SDG):	P1305675

Sample Identification

21-SG-30

Introduction

This data review covers one air sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 3C Modified for Fixed Gases.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No fixed gases contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate analysis was not required by the method.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG P1305675	All analytes reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

LDC #: 31199A51 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/30/14
SDG #: P1305675 ADR IV Page: 1 of 1
Laboratory: ALS Environmental Reviewer: KR
2nd Reviewer: C

METHOD: GC Fixed Gases (~~SOP VOA EPA3C)~~ EPA Method 3C Modified

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	1 w/ CCV ≤ 20%
IV.	Blanks	A	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	~~21-SG-04~~	11		21		31	
2	21-SG-27	12		22		32	
3	~~21-SG-27-DUP~~	13		23		33	
4	21-SG-30**	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31199A51

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) < 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) < 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31199A51

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓	~~✓~~	gn	
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC # 31199A~~49~~ 51

VALIDATION FINDINGS WORKSHEET

Initial Calibration Results Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC __X_____ HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported (CF 5004 std)	Recalculated (CF 5004 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	11/26/2013	Carbon Dioxide	22.19	22.19	21.2	21.2	5.22	5.22
	GC01								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31199A~~49~~ 51

VALIDATION FINDINGS WORKSHEET

Continuing Calibration Results Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC X HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported CF	Recalculated CF	Reported % D	Recalculated %D
1	12301301	12/30/2013 7:56	Carbon Dioxide	50040	51454.2	51454.1	2.8	2.8
2	12301316	12/30/2013 1:11	Carbon Dioxide	50040	52905.8	52905.9	6	6

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199A51

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 4 Compound Name Carbon Dioxide

CO_2 = 0.543% 6L canister

Concentration = (9566)(10)~~(1.46)~~ Rx / 21.2 = 4512.264151 ppm = ~~6587.90565~~ Rx

on-column:
O_2 = 174261.288
N_2 = 1031269.151
CO_2 = 4511.951

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications
	Total + pressurized canister:	Canister pressurized to +3.83 psig		% CO_2 in 7.563265 L	
	$\frac{(14.7 + 3.83)}{14.7} * 6L = 7.563265$ L total gas in canister			% CO_2 = $\frac{(4512.264151 \text{ ppm})}{(174261.288 + 1031269.151 + 4511.951)}$	
	Final canister pressure upon receipt = -1.97 psig				
	$\frac{14.7 + (-1.97)}{14.7} * 6L = 5.195918$ L sample in canister			= 0.372879619 / x 7.563265	
	~~Amt~~ Volume of N_2 added = 7.563265 - 5.195918 = 2.367347		N_2 added	% N_2 in 7.563265 L = $\frac{1031269.151}{}$ = 85.22586973% x 7.563265	= 0.0282

Comments:

N_2 in sample = 6.446 - 2.3674 = 4.07846 = 6.446 L N_2 in canister

% CO_2 in sample = $\left(\frac{0.0282}{5.196}\right) * 99.91$

= 0.542706957 % ≈ 5427.06957 ppmv

SAMPCALCnew.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, Basewide Monitoring
Collection Date:	December 19, 2013
LDC Report Date:	February 6, 2014
Matrix:	Air
Parameters:	Helium
Validation Level:	EPA Level IV
Laboratory:	ALS Environmental
Sample Delivery Group (SDG):	P1305675

Sample Identification

21-SG-30

Introduction

This data review covers one air sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 3C for Helium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No helium contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate analysis was not required by the method.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG P1305675	All analytes reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

LDC #: 31199A50

SDG #: P1305675

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 1/30/14

Page: 1 of 1

Reviewer: BR

2nd Reviewer: C

METHOD: GC Helium (EPA Method 3C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13 BR
II	Initial calibration	A	RSD ≤ 20%
III.	Calibration verification/ICV	A	|W| CCV ≤ 20%
IV.	Blanks	A	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

AIV

1	~~21-SG-04~~	11		21		31	P131230-MB
2	21-SG-31	12		22		32	
3	21-SG-27	13		23		33	
4	~~21-SG-27-DUP~~	14		24		34	
5	21-SG-30**	15		25		35	
6	~~21-SG-05~~	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31199450

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: [illegible]

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __ %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.		✓		
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31199A50

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?		✓		
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 31199A50

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (1000 std)	Recalculated CF (1000 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	12/20/2013	Helium	120.8	120.8	103.2	103.2	12.08%	12.08%
	GC10								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31199A50

VALIDATION FINDINGS WORKSHEET

Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer:

METHOD: GC X HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV CF/Conc	Reported CF/Conc	Recalculated CF/Conc	Reported % D	Recalculated %D
1	12301301	12/30/2013 7:59	Helium	10000	10961.76	10961.78	9.62	9.62
2	12301312	12/30/2013 10:14	Helium	10000	11299.33	11299.33	12.99	12.99

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199150

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 5 Compound Name Helium

Concentration = ND

P131230 - LCS
Helium: 10900 ppmv

$= \frac{112268}{(103.1557)(0.1)} = 10883.354$ ppmv

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Treasure Island, Basewide Monitoring
Collection Date:	December 19, 2013
LDC Report Date:	February 6, 2014
Matrix:	Air
Parameters:	Hydrogen Sulfide
Validation Level:	EPA Level IV
Laboratory:	ALS Environmental
Sample Delivery Group (SDG):	P1305675

Sample Identification

21-SG-30

Introduction

This data review covers one air sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D 5504-08 for Hydrogen Sulfide.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No hydrogen sulfide contaminants were found in the method blanks.

No field blanks were identified in this SDG.

V. Surrogate Recovery

Surrogates were not required by the method.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate analysis was not required by the method.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

All target compound identifications were within validation criteria.

IX. Compound Quantitation

All compound quantitations were within validation criteria.

All compounds reported below the LOQ were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG P1305675	All analytes reported below the LOQ.	J (all detects)	A

X. System Performance

The system performance was acceptable.

XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

Treasure Island, Basewide Monitoring
Hydrogen Sulfide - Data Qualification Summary - SDG P1305675

SDG	Sample	Analyte	Flag	A or P	Reason
P1305675	21-SG-30	All analytes reported below the LOQ.	J (all detects)	A	Compound quantitation

Treasure Island, Basewide Monitoring
Hydrogen Sulfide - Laboratory Blank Data Qualification Summary - SDG P1305675

No Sample Data Qualified in this SDG

Treasure Island, Basewide Monitoring
Hydrogen Sulfide - Field Blank Data Qualification Summary - SDG P1305675

No Sample Data Qualified in this SDG

LDC #: 31199A49 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/30/14
SDG #: P1305675 ADR/IV Page: 1 of 1
Laboratory: ALS Environmental Reviewer: BR
2nd Reviewer: C

METHOD: GC Hydrogen Sulfide (ASTM D 5504-08)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/19/13
II	Initial calibration	A	RSD ≤20?
III.	Calibration verification/ICV	A	1 CW (CCV ≤20)
IV.	Blanks	A	Not reviewed for ADR validation.
V	Surrogate recovery	N	Not reviewed for ADR validation.
VI.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS/D
VIII.	Target compound identification	A	Not reviewed for ADR validation.
IX.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for ADR validation.
X.	System Performance	A	Not reviewed for ADR validation.
XI.	Overall assessment of data	A	Not reviewed for ADR validation.
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

A-IV

1	~~21-SG-04~~	11		21		31	P131227-MB
2	21-SG-27	12		22		32	
3	~~21-SG-27-DUP~~	13		23		33	
4	21-SG-30**	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 31199A49

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Method: X GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? X %D or __%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			

LDC #: 31199A49

VALIDATION FINDINGS CHECKLIST

Reviewer: BR
2nd Reviewer: C

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

LDC #: 31199A49

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC X HPLC _____

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (498.00 std)	Recalculated CF (498.00 std)	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	6/11/2013	Hydrogen Sulfide	34820	34816	29350	29347	11.33%	11.33%
	GC13								

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC # 31199A49

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: BR
2nd Reviewer: [illegible]

METHOD: GC__X___HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

Percent difference (%D) = 100 * (N - C)/N

Where:
N = Initial Calibration Factor or Nominal Amount
C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV CF/Conc	Reported CF/Conc	Recalculated CF/Conc	Reported % D	Recalculated %D
1	12271302		Hydrogen Sulfide	2000	1998.14	1998.14	0.3	0.1
2	12271320		Hydrogen Sulfide	2000	1983.881	1983.881	0.4	0.8

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31199A49

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: BR
2nd Reviewer: [illegible]

METHOD: X GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 4 Compound Name Hydrogen Sulfide

Concentration = ND

LCS: P131227-LCS = 56405304 / 29347.196 = 1921.999771 ppbv

H_2S = 1920 ppbv

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments:

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Appendix D: Mann-Kendall Statistical Trend Analysis

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 6	Constituent:	Well 06-MW25
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	TPHg	benzene	toluene	ethylbenzene	xylenes (total)	naphthalene
Sampling Event	Sampling Date	WELL 06-MW25 CONCENTRATION (ug/L)						
1	13-Mar-13	270	1100	--	--	--	--	--
2	16-Apr-13	--	--	11	28	76	160	--
3	24-Jun-13	130	370	29	12	51	35	5.9
4	16-Sep-13	50	11	0.88	0.25	1.0	1.0	0.50
5	10-Dec-13	50	120	3.7	0.72	3.8	5.0	2.3
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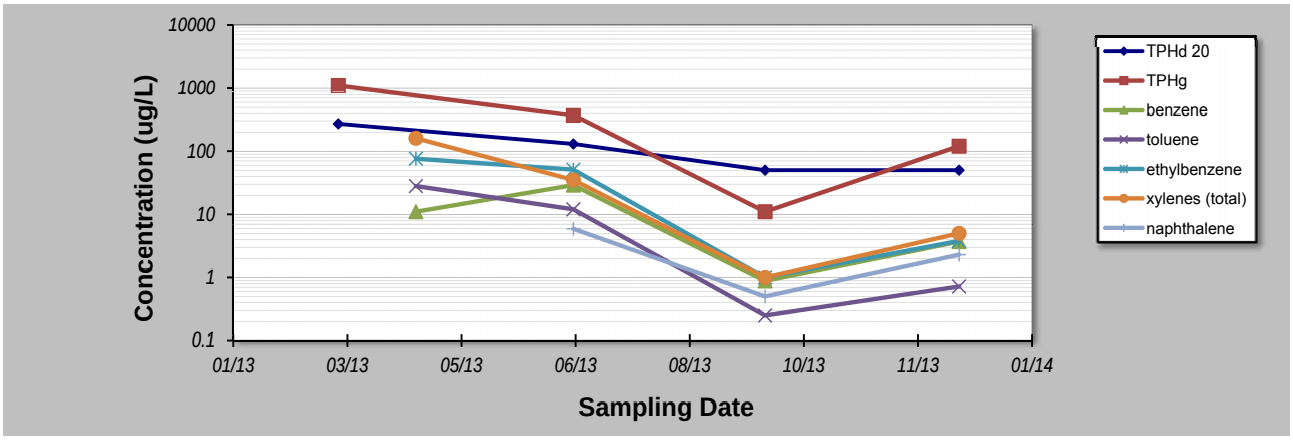
20								
Coefficient of Variation:		0.83	1.22	1.13	1.27	1.12	1.49	0.95
Mann-Kendall Statistic (S):		-5	-4	-2	-4	-4	-4	-1
Confidence Factor:		89.6%	83.3%	62.5%	83.3%	83.3%	83.3%	
Concentration Trend:		Stable	No Trend	No Trend	No Trend	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 6	Constituent:	Well 06-MW26
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	TPHg	benzene	toluene	ethylbenzene	xylenes (total)	naphthalene
Sampling Event	Sampling Date	WELL 06-MW26 CONCENTRATION (ug/L)						
1	13-Mar-13	50	50	--	--	--	--	--
2	16-Apr-13	--	--	2.2	6.1	8.6	5.0	--
3	24-Jun-13	55	24	0.55	0.71	1.5	9.4	0.50
4	16-Sep-13	46.5	15	0.23	0.22	1.8	2.4	0.50
5	10-Dec-13	55	50	0.25	0.25	0.50	0.50	0.50
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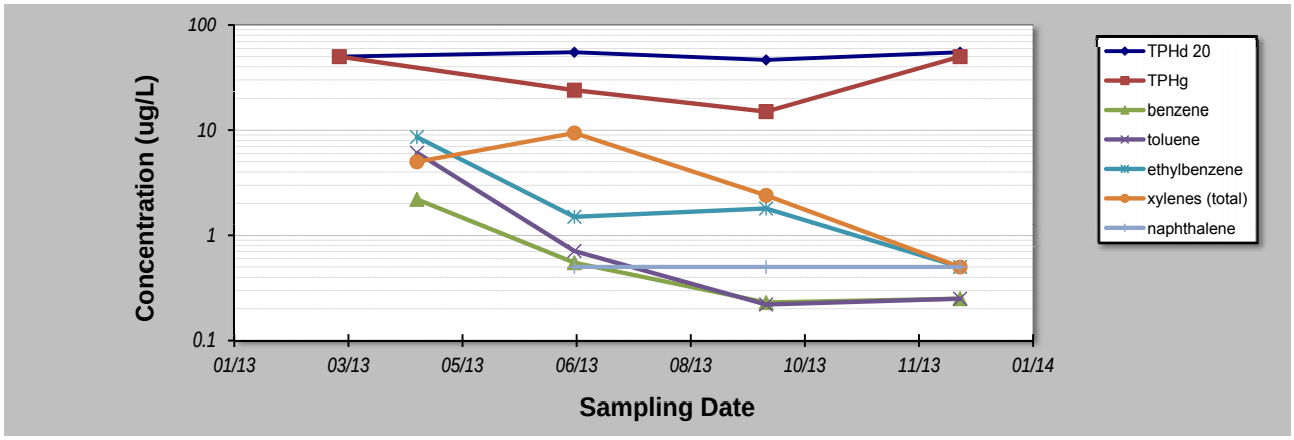
Coefficient of Variation:		0.08	0.52	1.16	1.57	1.20	0.89	0.00
Mann-Kendall Statistic (S):		1	-1	-4	-4	-4	-4	0
Confidence Factor:		50.0%	50.0%	83.3%	83.3%	83.3%	83.3%	
Concentration Trend:		No Trend	Stable	No Trend	No Trend	No Trend	Stable	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW05
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW05 CONCENTRATION (ug/L)						
1	30-Sep-08	1100	140	35.4	0.5	0.5		
2	9-Dec-08	730	134	37.4	0.5	0.5		
3	10-Jun-09	930	114	41.4	0.5	0.5		
4	1-Dec-09	960	137	33.0	0.5	0.5		
5	15-Jun-10	1400	119	38.0	0.5	0.5		
6	6-Dec-10	900	122	31.7	0.5	0.5		
7	16-Jun-11	960	186	45	0.5	0.5		
8	13-Dec-11	790	133	26.1	1.12	0.5		
9	13-Jun-12	810	135	28.3	0.825	0.5		
10	12-Dec-12	410	69.1	26.4	0.648	0.5		
11	25-Jun-13	670	132	19	0.5	0.5		
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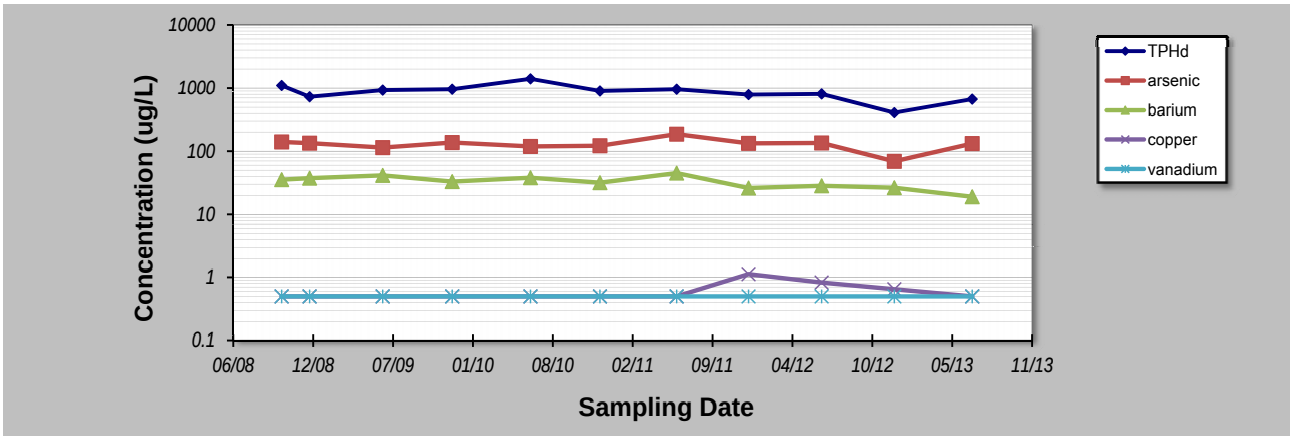
20								
Coefficient of Variation:		0.29	0.21	0.23	0.34	0.00		
Mann-Kendall Statistic (S):		-24	-9	-27	15	0		
Confidence Factor:		96.4%	72.9%	98.0%	85.9%	45.1%		
Concentration Trend:		Decreasing	Stable	Decreasing	No Trend	Stable		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, Mariner Drive	Constituent:	Well 12-MW15
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	arsenic	cobalt	copper				
Sampling Event	Sampling Date	WELL 12-MW15 CONCENTRATION (ug/L)						
1	9-Dec-08	37.8	1.41	0.375				
2	1-Dec-09	31.5	2.38	0.519				
3	6-Dec-10	26.9	1.57	0.5				
4	14-Dec-11	25.7	1.23	0.602				
5	12-Dec-12	20.3	1.03	1.19				
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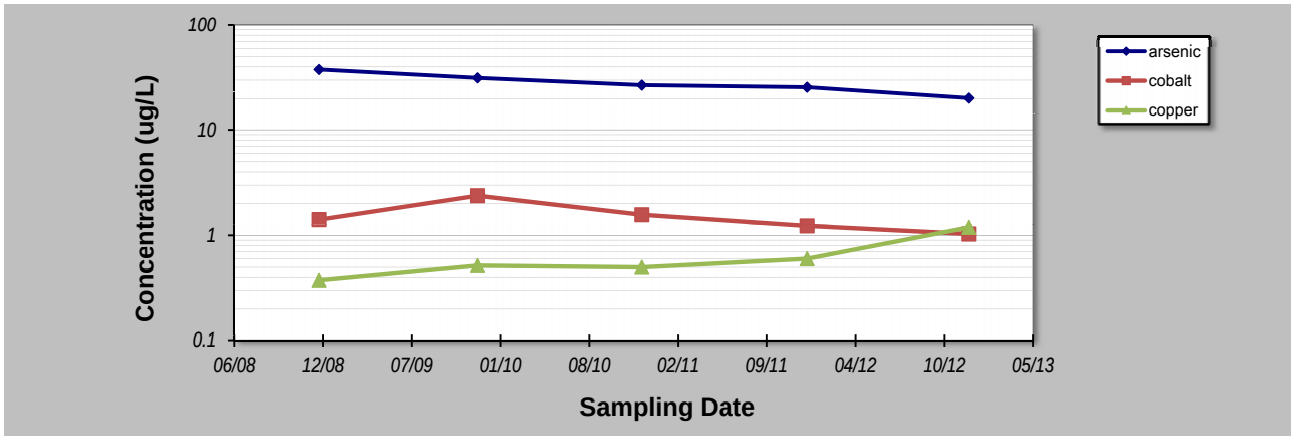
Coefficient of Variation:		0.23	0.34	0.50				
Mann-Kendall Statistic (S):		-10	-6	8				
Confidence Factor:		99.2%	88.3%	95.8%				
Concentration Trend:		Decreasing	Stable	Increasing				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, Mariner Drive	Constituent:	Well 12-MW16
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	arsenic	cobalt	copper				
Sampling Event	Sampling Date	WELL 12-MW16 CONCENTRATION (ug/L)						
1	9-Dec-08	31	0.5	1.9				
2	1-Dec-09	29.4	0.5	0.5				
3	6-Dec-10	27.5	0.5	0.903				
4	14-Dec-11	25	0.283	0.5				
5	12-Dec-12	23.1	0.298	2.79				
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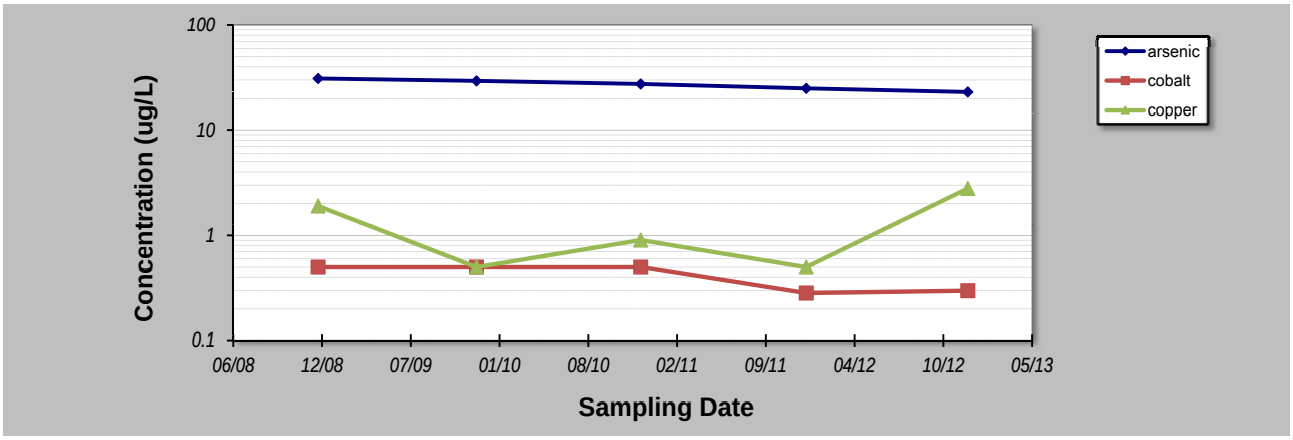
19								
20								
Coefficient of Variation:		0.12	0.28	0.76				
Mann-Kendall Statistic (S):		-10	-5	1				
Confidence Factor:		99.2%	82.1%	50.0%				
Concentration Trend:		Decreasing	Stable	No Trend				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1207/1209	Constituent:	Well 12-MW17
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	copper	molybdenum	nickel	vanadium	zinc
Sampling Event	Sampling Date	WELL 12-MW17 CONCENTRATION (ug/L)						
1	9-Dec-08	47	19.9	13.1	16.9	1.34	0.706	5
2	1-Dec-09	48.5	18.4	13.6	17.5	2.5	2.5	25
3	7-Dec-10	58	21	3.07	19.4	2.5	2.5	25
4	15-Dec-11	50	23.1	9.93	17.5	3	2.5	50
5	11-Dec-12	--	25.9	19	17.8	5.09	5.2	28.7
6								
7								
8								
9								
10								
11								
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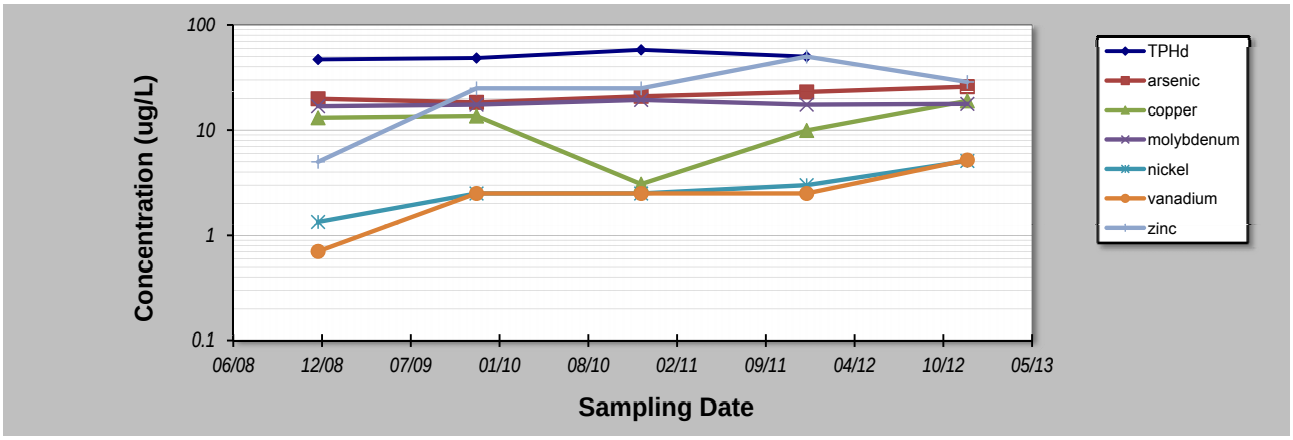
20								
Coefficient of Variation:		0.10	0.14	0.50	0.05	0.48	0.60	0.60
Mann-Kendall Statistic (S):		4	8	2	5	9	7	7
Confidence Factor:		83.3%	95.8%	59.2%	82.1%	97.5%	92.1%	92.1%
Concentration Trend:		No Trend	Increasing	No Trend	No Trend	Increasing	Prob. Increasing	Prob. Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1207/1209	Constituent:	Well 12-MW19
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	copper	molybdenum	nickel	vanadium	zinc
Sampling Event	Sampling Date	WELL 12-MW19 CONCENTRATION (ug/L)						
1	9-Dec-08	500	8.71	1.26	3.99	0.492	1.58	7.6
2	1-Dec-09	330	9.05	3.28	4.32	1.69	1.07	24.8
3	6-Dec-10	360	10.4	7.97	3.56	2.43	1.33	58.7
4	12-Dec-12	--	9.44	44	3.09	11.8	1.15	150
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
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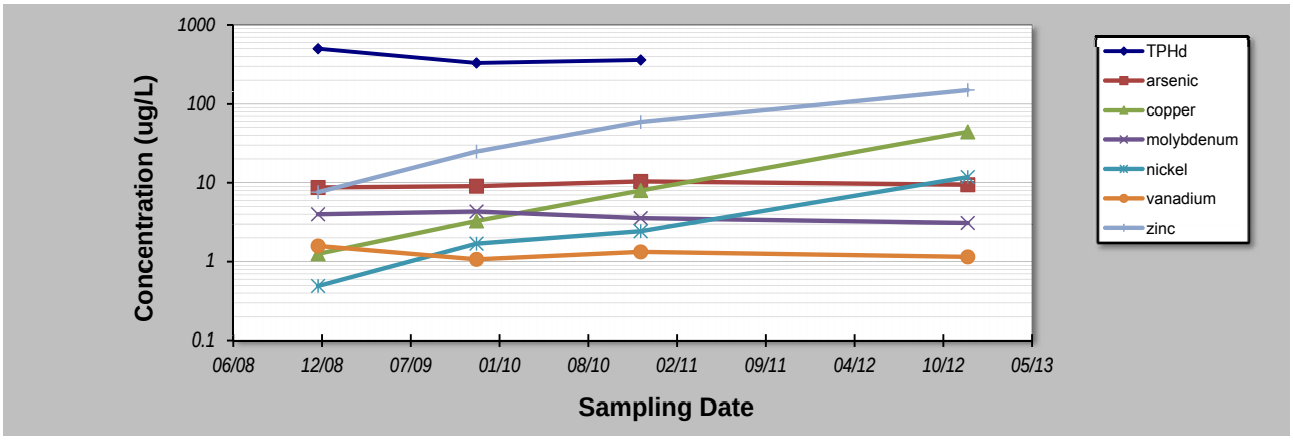
20								
Coefficient of Variation:		0.23	0.08	1.42	0.14	1.27	0.18	1.05
Mann-Kendall Statistic (S):		-1	4	6	-4	6	-2	6
Confidence Factor:			83.3%	95.8%	83.3%	95.8%	62.5%	95.8%
Concentration Trend:			No Trend	Increasing	Stable	Increasing	Stable	Increasing



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW20
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW20 CONCENTRATION (ug/L)					
1	30-Sep-08	47	38.6	176	2.74	1.87	
2	9-Dec-08	530	77.2	167	0.5	1.21	
3	10-Jun-09	48	13.1	117	4.34	0.525	
4	1-Dec-09	1700	109	167	0.5	1.87	
5	15-Jun-10	1100	98.9	158	0.5	0.5	
6	7-Dec-10	47.5	8.9	133	1.15	0.723	
7	16-Jun-11	55	93.5	367	14.3	18.6	
8	13-Dec-11	300	45.7	125	1.15	0.983	
9	13-Jun-12	510	73.2	132	2.09	1.14	
10	12-Dec-12	690	27.8	129	2.25	0.938	
11	24-Jun-13	360	85.1	131	0.675	0.563	
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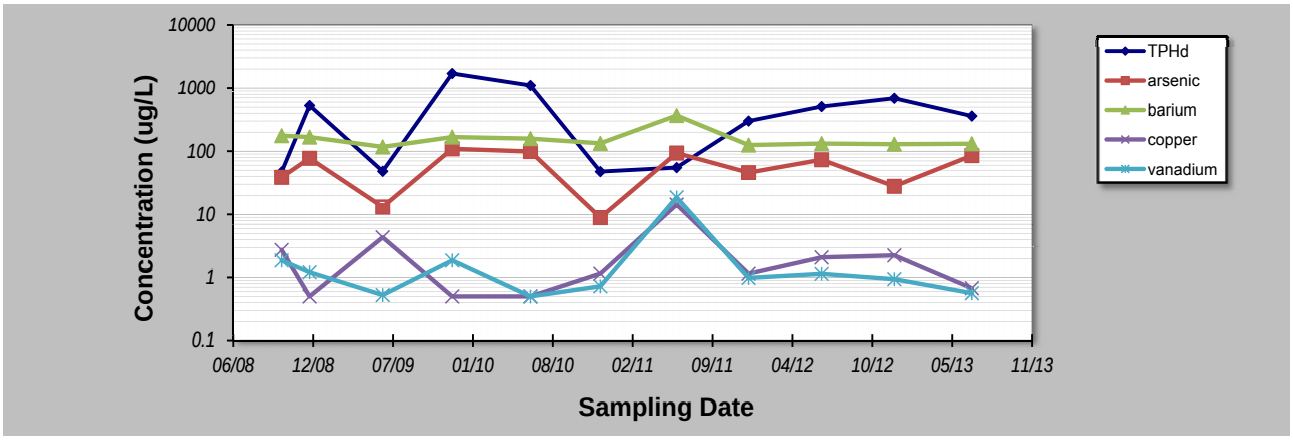
Coefficient of Variation:		1.06	0.58	0.43	1.46	2.02	
Mann-Kendall Statistic (S):		11	-1	-20	5	-10	
Confidence Factor:		77.7%	50.0%	92.9%	61.9%	75.3%	
Concentration Trend:		No Trend	Stable	Prob. Decreasing	No Trend	No Trend	



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW21
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW21 CONCENTRATION (ug/L)						
1	9-Dec-08	520	60.3	103	0.685	6.56		
2	1-Dec-09	610	35.3	114	2.85	2.81		
3	6-Dec-10	49	1.85	96.1	18.8	2.4		
4	15-Dec-11	310	44.7	115	1.01	2.71		
5	12-Dec-12	260	42.3	132	4.34	1.61		
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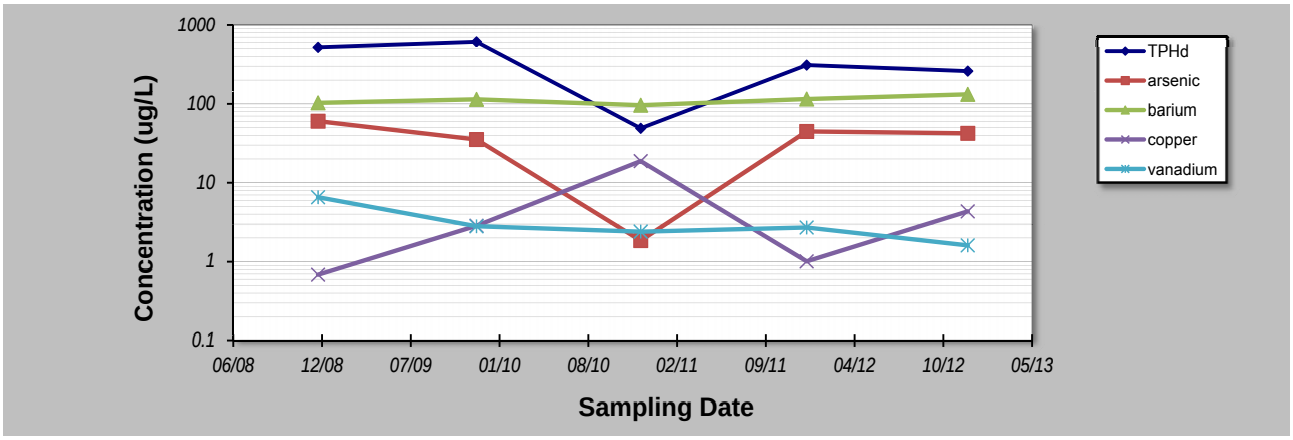
Coefficient of Variation:		0.63	0.59	0.12	1.37	0.60		
Mann-Kendall Statistic (S):		-4	-2	6	4	-8		
Confidence Factor:		75.8%	59.2%	88.3%	75.8%	95.8%		
Concentration Trend:		Stable	Stable	No Trend	No Trend	Decreasing		



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW22
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW22 CONCENTRATION (ug/L)						
1	30-Sep-08	670	95.3	65	0.5	0.5		
2	10-Dec-08	1200	91.6	57.3	1.53	0.587		
3	10-Jun-09	1400	94.2	31.4	0.5	0.5		
4	2-Dec-09	1400	172	42	0.511	1.51		
5	15-Jun-10	1200	63.4	31	0.502	0.5		
6	7-Dec-10	450	65.3	37.8	0.5	0.5		
7	16-Jun-11	1800	138	40.7	1.46	1.05		
8	13-Dec-11	1600	94.5	36.7	2.67	0.776		
9	13-Jun-12	910	86.6	30.7	1.01	0.54		
10	12-Dec-12	320	36.6	21	1.77	0.626		
11	25-Jun-13	390	31.3	49.5	1.79	0.566		
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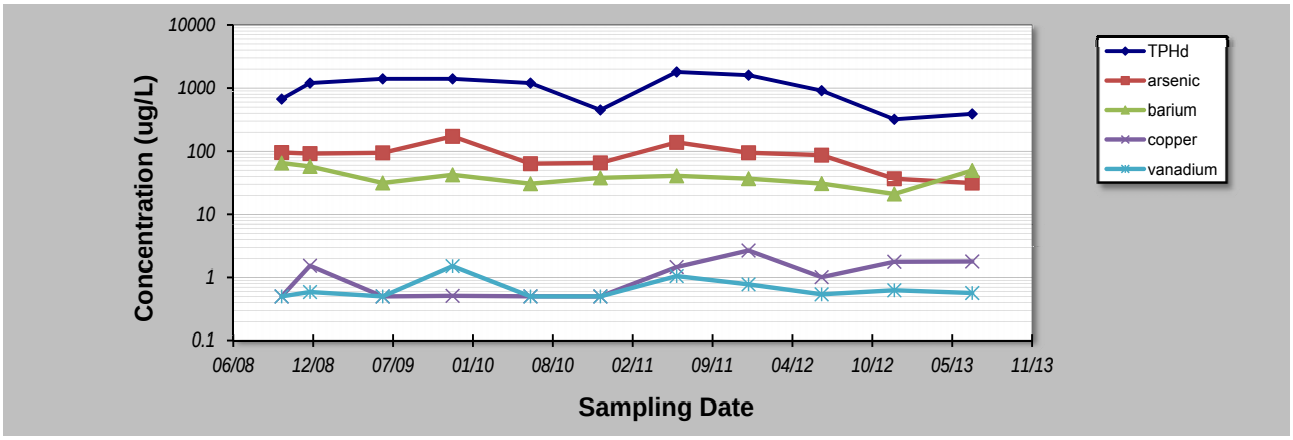
Coefficient of Variation:		0.50	0.46	0.32	0.64	0.46		
Mann-Kendall Statistic (S):		-11	-23	-21	26	9		
Confidence Factor:		77.7%	95.7%	94.0%	97.5%	72.9%		
Concentration Trend:		Stable	Decreasing	Prob. Decreasing	Increasing	No Trend		



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW23
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW23 CONCENTRATION (ug/L)						
1	30-Sep-08	1600	116	71	0.847	0.532		
2	9-Dec-08	530	120	58.2	0.75	1.45		
3	10-Jun-09	720	81	63	0.5	0.5		
4	1-Dec-09	630	68.4	58	0.5	0.5		
5	15-Jun-10	780	92.9	86	0.508	0.5		
6	6-Dec-10	720	52.1	50.8	1.05	0.5		
7	16-Jun-11	660	103 J	69.9	0.893	0.608		
8	13-Dec-11	490	52.4	49	0.771	0.5		
9	13-Jun-12	520	98.2	62.6	0.71	0.5		
10	12-Dec-12	380	61.3	56.8	1.86	0.5		
11	25-Jun-13	530	96.1	71.4	0.5	0.5		
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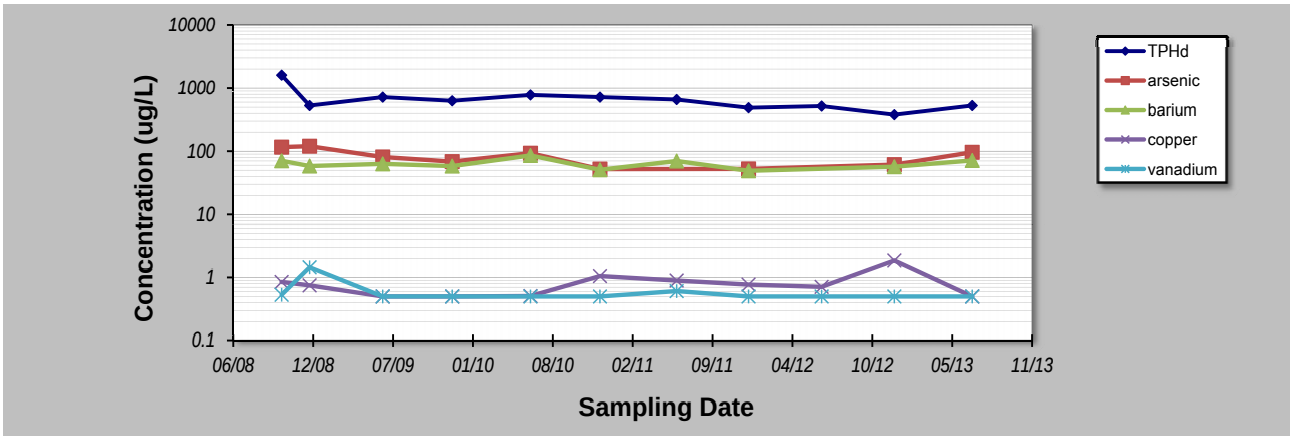
Coefficient of Variation:		0.47	0.31	0.18	0.49	0.47		
Mann-Kendall Statistic (S):		-27	-7	-1	4	-15		
Confidence Factor:		98.0%	72.8%	50.0%	59.0%	85.9%		
Concentration Trend:		Decreasing	Stable	Stable	No Trend	Stable		



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW24
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW24 CONCENTRATION (ug/L)						
1	9-Dec-08	520 J	90.2	100	0.5	1.21		
2	1-Dec-09	760	77.6	139	0.5	2.35		
3	6-Dec-10	390	60.2	101	0.5	1.47		
4	13-Dec-11	560	97.7	94	0.776	1.15		
5	12-Dec-12	270	24.7	97	8.47	1.23		
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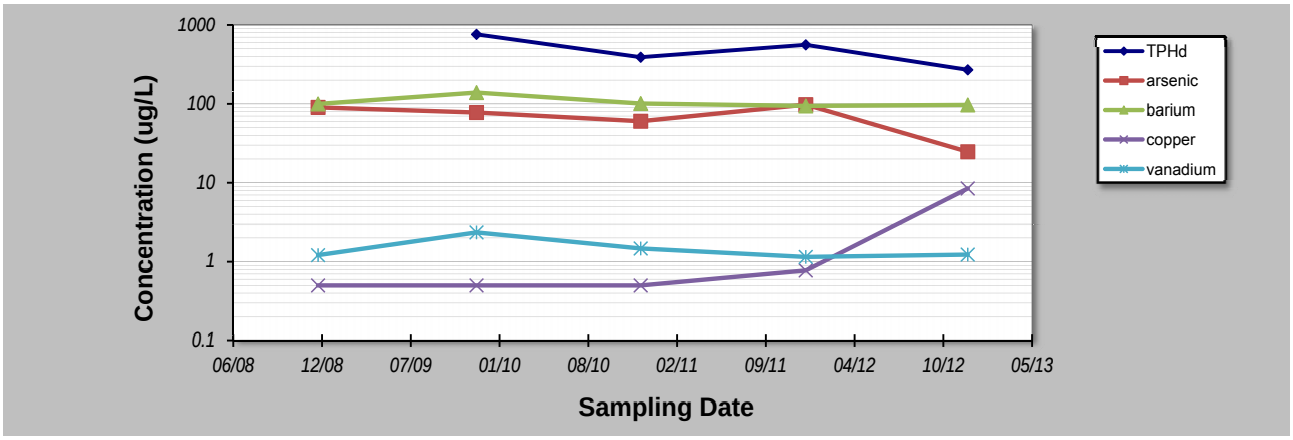
Coefficient of Variation:		0.43	0.41	0.17	1.65	0.34		
Mann-Kendall Statistic (S):		-4	-4	-4	7	-2		
Confidence Factor:		83.3%	75.8%	75.8%	92.1%	59.2%		
Concentration Trend:		Stable	Stable	Stable	Prob. Increasing	Stable		



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	2-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA A&B	Constituent:	Well 12-MW31
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	arsenic	barium	cobalt	copper	nickel	zinc	
Sampling Event	Sampling Date	WELL 12-MW31 CONCENTRATION (ug/L)					
1	9-Dec-08	0.5	54.4	0.5	2.6	0.28	9.7
2	1-Dec-09	0.5	71.1	0.5	3.71	0.5	16.4
3	6-Dec-10	1.27	98.5	0.88	3.31	1.58	11.3
4	15-Dec-11	0.392	23.9	0.5	3.86	0.5	10.0
5	11-Dec-12	0.314	32.4	0.5	6.84	0.781	16.1
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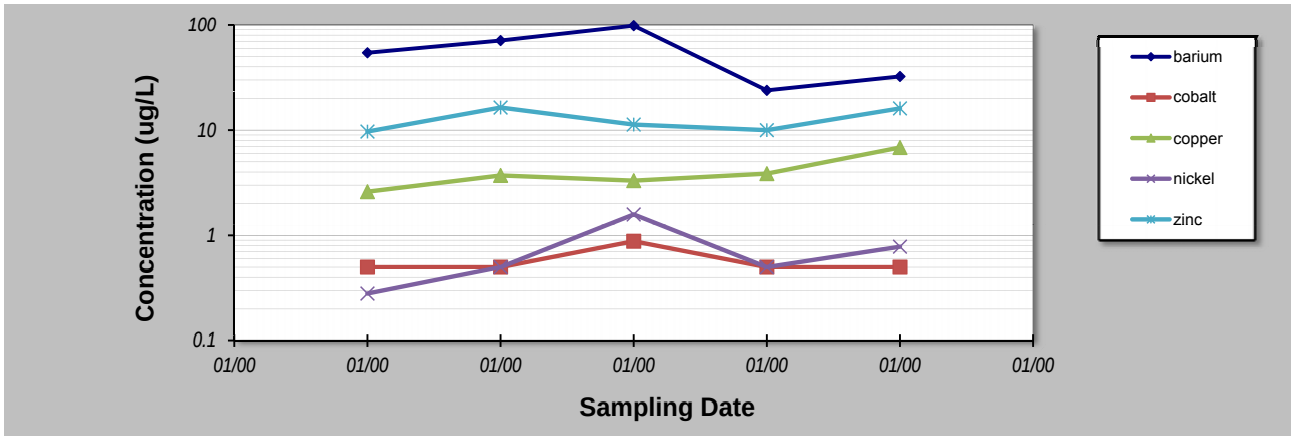
Coefficient of Variation:		0.65	0.54	0.30	0.40	0.70	0.26
Mann-Kendall Statistic (S):		-5	-2	0	8	5	2
Confidence Factor:		82.1%	59.2%	40.8%	95.8%	82.1%	59.2%
Concentration Trend:		Stable	Stable	Stable	Increasing	No Trend	No Trend



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	5-May-14	Job ID:	
Facility Name:	NSTI Site 12, SWDA 1311/1313	Constituent:	Well 12-MW34
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		TPHd	arsenic	barium	copper	vanadium		
Sampling Event	Sampling Date	WELL 12-MW34 CONCENTRATION (ug/L)						
1	10-Dec-08	100	9.65	200	2.5	2.5		
2	2-Dec-09	110	16.5	89.8	2.5	5.98		
3	7-Dec-10	110	19	97.4	5	5		
4	13-Dec-11	120	17.7	154	4.3	4.29		
5	12-Dec-12	99	23.4	50	7.15	8.97		
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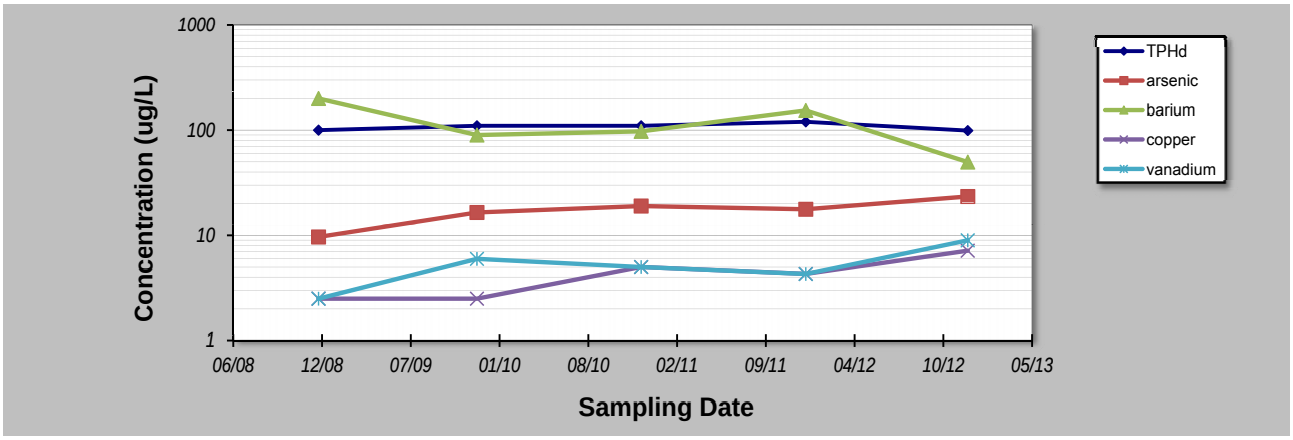
Coefficient of Variation:		0.08	0.29	0.50	0.45	0.45		
Mann-Kendall Statistic (S):		1	8	-4	7	4		
Confidence Factor:		50.0%	95.8%	75.8%	92.1%	75.8%		
Concentration Trend:		No Trend	Increasing	Stable	Prob. Increasing	No Trend		



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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 21	Constituent:	Well 21-IP07
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	**Sampling Date**	**WELL 21-IP07 CONCENTRATION (ug/L)**					
1	10-Mar-11	0.25	0.25	0.25	0.6	1.4	
2	11-Jul-11	0.1	0.1	0.3	1.1	13	
3	18-Oct-11	0.25	0.25	1	2.3	24	
4	24-Jan-12	0.25	0.25	7.4	5.9	100	
5	27-Jun-12	0.25	0.25	350	16	660	
6	19-Sep-12	0.25	0.25	830	38	1300	
7	5-Dec-12	0.25	0.25	630	33	1100	
8	6-Mar-13	0.25	0.25	520	28	810	
9	10-Dec-13	0.25	0.25	0.25	9.9	14	
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11							
12							
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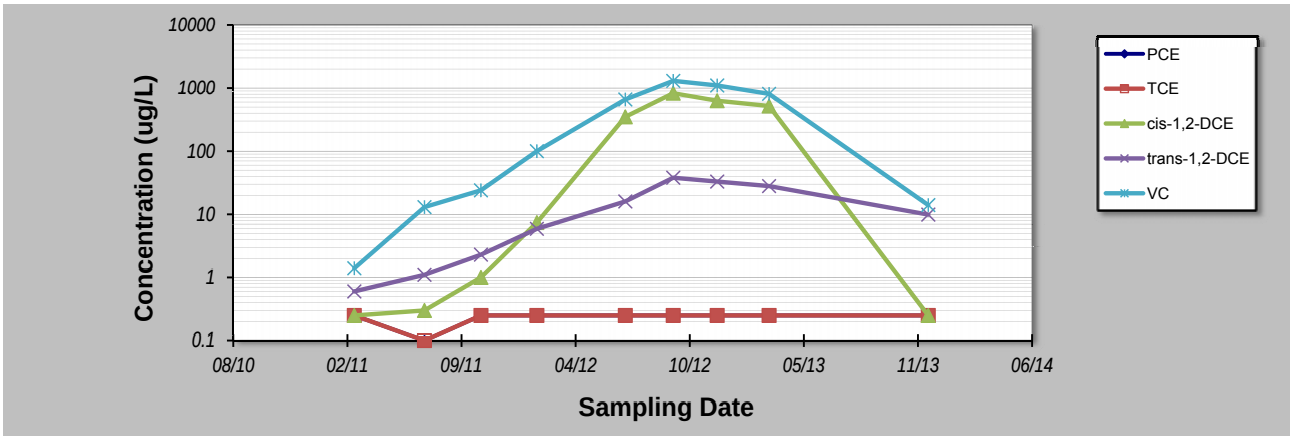
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		0.21	0.21	1.27	0.97	1.17	
Mann-Kendall Statistic (S):		6	6	15	22	18	
Confidence Factor:		69.4%	69.4%	92.5%	98.8%	96.2%	
Concentration Trend:		No Trend	No Trend	Prob. Increasing	Increasing	Increasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 21	Constituent:	Well 21-MW02A
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 21-MW02A CONCENTRATION (ug/L)					
1	23-Mar-09	2.5	2.8	2000	33	430	
2	25-Jun-09	0.85	1.3	0.8	1.7	0.85	
3	22-Sep-09	3.4	4.7	1.5	1.3	0.5	
4	21-Jan-10	0.25	0.2	0.3	0.6	0.2	
5	22-Apr-10	0.25	0.7	0.25	0.9	0.2	
6	15-Mar-11	0.25	1.2	0.25	0.25	1.2	
7	12-Jul-11	1.4	1.9	1.2	1.6	1.7	
8	18-Oct-11	0.5	1.3	0.5	1.6	0.8	
9	25-Jan-12	1.5	0.5	0.5	2.1	0.6	
10	27-Jun-12	2.9	2.5	1.9	2.1	2.9	
11	19-Sep-12	2.3	0.85	1	2.2	1.9	
12	3-Dec-12	2.6	2.1	6.8	3.2	19	
13	5-Mar-13	1.4	1.4	99	9.1	130	
14	10-Dec-13	3.7	1.4	0.29	0.68	0.36	
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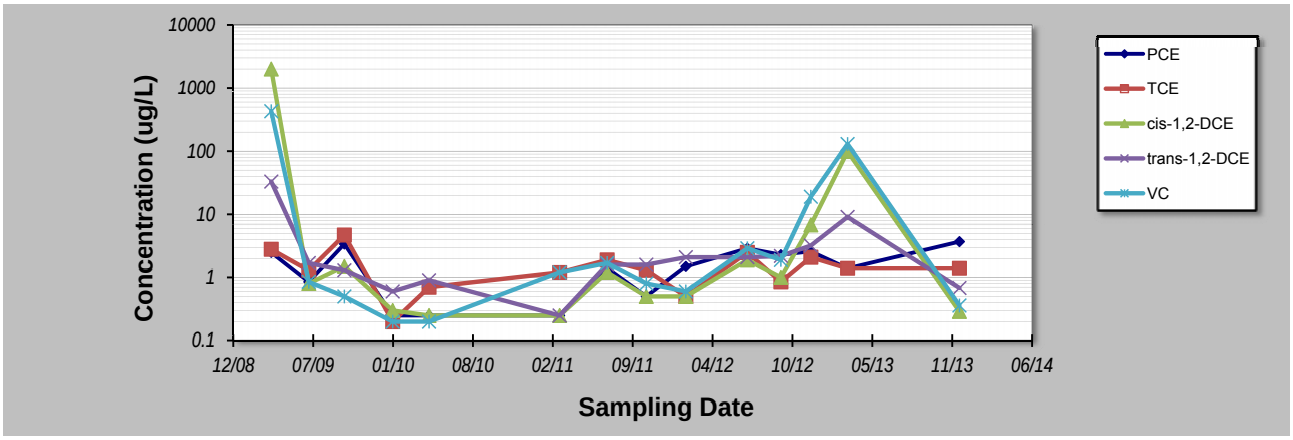
16							
17							
18							
19							
20							
Coefficient of Variation:		0.71	0.70	3.53	1.98	2.77	
Mann-Kendall Statistic (S):		27	1	7	21	18	
Confidence Factor:		92.1%	50.0%	62.6%	86.0%	82.1%	
Concentration Trend:		Prob. Increasing	No Trend	No Trend	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 21	Constituent:	Well 21-MW09A
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 21-MW09A CONCENTRATION (ug/L)					
1	23-Mar-09	0.3	0.6	21	0.8	2.8	
2	24-Jun-09	2.8	19	18	5.3	3.7	
3	22-Sep-09	3.1	21	53	7.8	6.8	
4	26-Jan-10	0.7	14	73	9.7	18	
5	22-Apr-10	0.7	12	30	3.6	10	
6	14-Mar-11	1.1	8.1	30	2.3	4.1	
7	7-Jul-11	0.7	5	29	1.8	6.5	
8	19-Oct-11	0.25	3.9	24	2	8.5	
9	25-Jan-12	0.6	5.4	26	2.5	7.5	
10	27-Jun-12	0.51	2.7	17	1.0	5.3	
11	18-Sep-12	0.34	1.7	19	1.4	9.7	
12	5-Dec-12	0.58	3.0	23	3.0	8.8	
13	6-Mar-13	0.25	3.0	20	1.7	6.2	
14	10-Dec-13	0.48	3.8	21	3.2	4.5	
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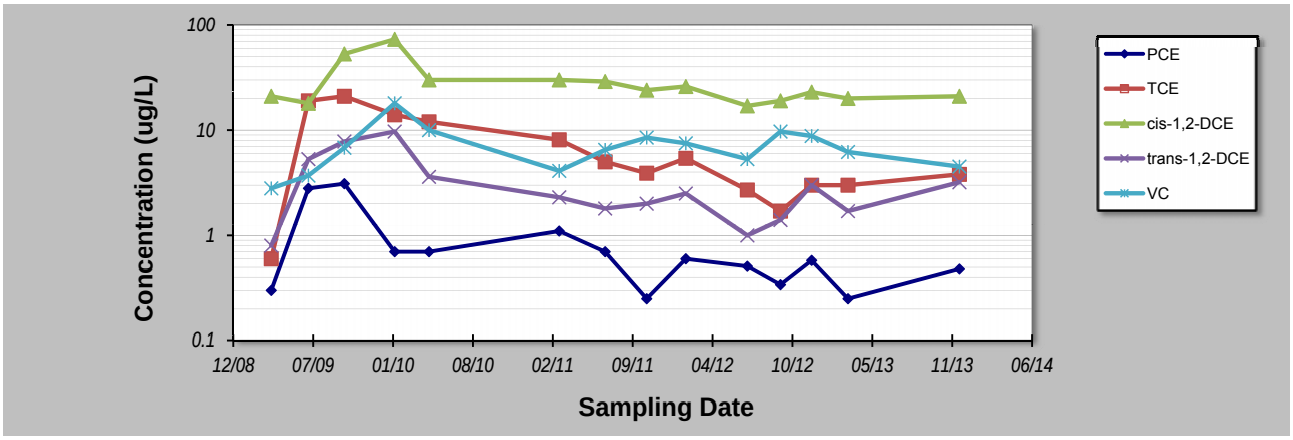
20							
Coefficient of Variation:		1.02	0.89	0.54	0.79	0.52	
Mann-Kendall Statistic (S):		-41	-42	-31	-17	9	
Confidence Factor:		98.7%	98.9%	95.0%	80.6%	66.6%	
Concentration Trend:		Decreasing	Decreasing	Prob. Decreasing	Stable	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-BB38
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-BB38 CONCENTRATION (ug/L)						
1	27-Jan-05	8.9	382	1300	37	2		
2	19-Sep-12	0.25	1.3	10	0.49	7.3		
3	12-Mar-13	0.25	1.3	26	0.55	11		
4	12-Dec-13	0.25	1.7	30	0.57	8.3		
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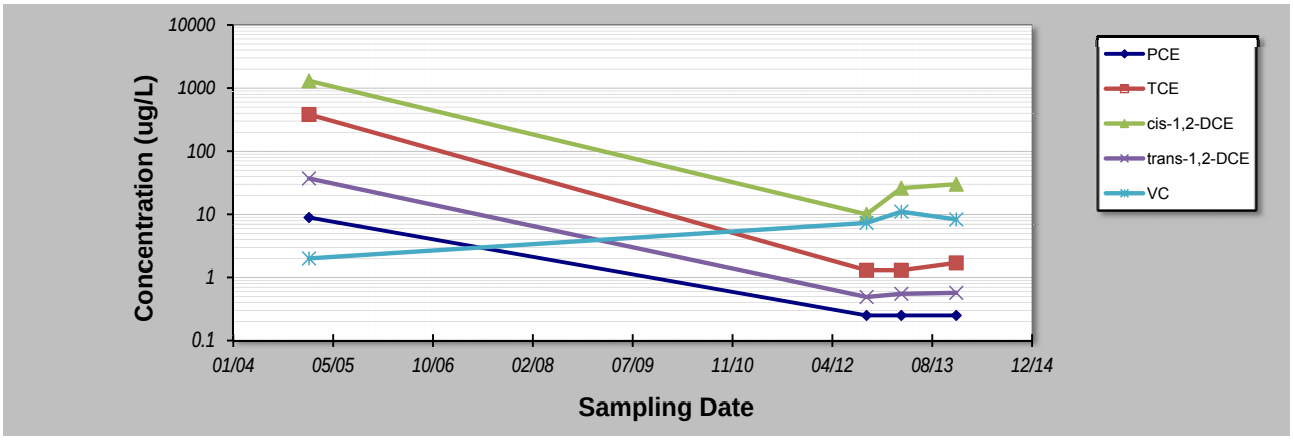
Coefficient of Variation:		1.79	1.97	1.87	1.89	0.53		
Mann-Kendall Statistic (S):		-3	-1	0	0	4		
Confidence Factor:		72.9%	50.0%	37.5%	37.5%	83.3%		
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-BB63
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	**Sampling Date**	**WELL 24-BB63 CONCENTRATION (ug/L)**					
1	29-Jan-07	0.25	0.2	9.4	0.25	1.6	
2	31-Mar-11	0.25	0.25	7.2	0.6	11	
3	5-Jul-11	0.1	0.05	0.3	0.4	0.8	
4	26-Sep-12	0.25	0.25	0.25	0.25	0.20	
5	7-Mar-13	0.25	0.25	3.4	0.25	5.5	
6	12-Dec-13	0.25	0.25	9.3	0.18	10	
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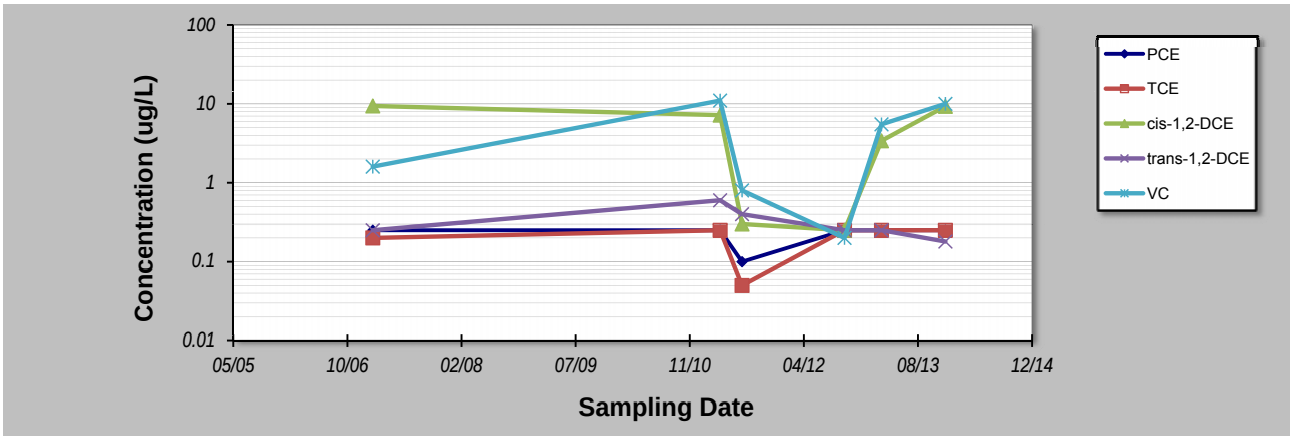
20							
Coefficient of Variation:	0.27	0.38	0.85	0.48	0.98		
Mann-Kendall Statistic (S):	1	5	-3	-8	1		
Confidence Factor:	50.0%	76.5%	64.0%	89.8%	50.0%		
Concentration Trend:	No Trend	No Trend	Stable	Stable	No Trend		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-BB76
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-BB76 CONCENTRATION (ug/L)						
1	12-Jul-10	0.25	0.25	1.6	0.25	1.9		
2	28-Mar-11	0.25	0.25	0.25	0.25	0.2		
3	12-Oct-11	0.25	0.25	1.3	0.25	2.0		
4	23-Jan-12	0.25	0.25	1.4	0.25	1.4		
5	26-Jun-12	0.25	0.25	1.8	0.25	1.4		
6	19-Sep-12	0.25	0.25	0.68	0.25	1.2		
7	10-Dec-12	0.25	0.25	3.5	0.25	2.1		
8	6-Mar-13	0.25	0.25	2.4	0.25	1.6		
9	11-Dec-13	0.25	0.25	0.72	0.25	0.25		
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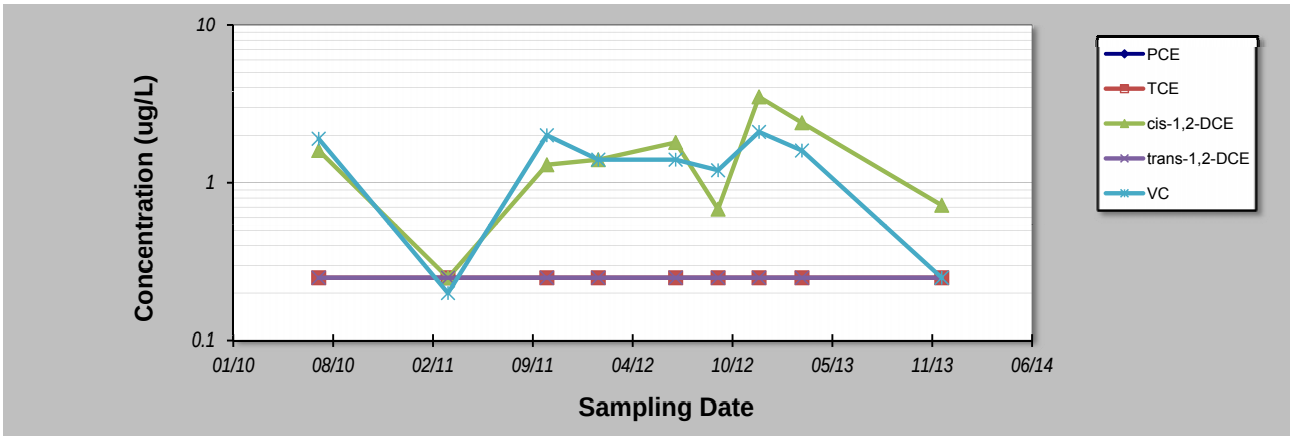
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.00	0.00	0.65	0.00	0.52		
Mann-Kendall Statistic (S):		0	0	8	0	-3		
Confidence Factor:		46.0%	46.0%	76.2%	46.0%	58.0%		
Concentration Trend:		Stable	Stable	No Trend	Stable	Stable		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-BB80
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-BB80 CONCENTRATION (ug/L)					
1	30-Jan-07	0.25	0.09	0.4	0.2	23	
2	1-Feb-10	0.5	0.4	110	0.6	15	
3	21-Apr-10	0.25	0.25	10	0.25	4.3	
4	22-Mar-11	0.25	0.25	4.2	0.25	1.9	
5	5-Jul-11	0.1	0.05	2.5	0.1	1.8	
6	6-Oct-11	0.25	0.25	4.1	0.25	2.8	
7	23-Jan-12	0.25	0.25	17	0.25	6	
8	27-Jun-12	0.25	0.25	0.26	0.25	0.68	
9	6-Dec-12	0.25	0.25	6.0	0.25	7.2	
10	12-Dec-13	0.25	0.25	2.8	0.25	2.3	
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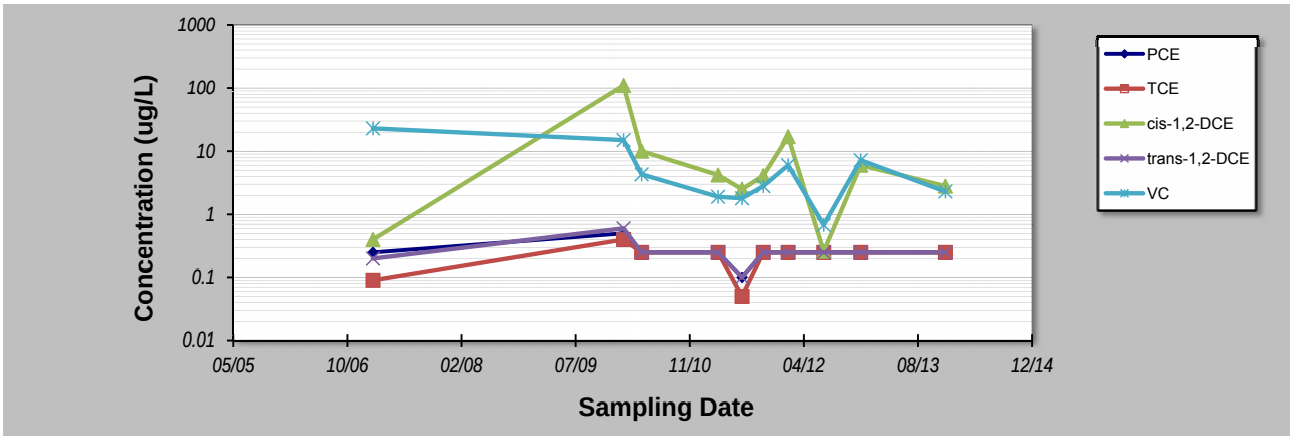
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		0.37	0.42	2.13	0.48	1.10	
Mann-Kendall Statistic (S):		-5	2	-7	2	-15	
Confidence Factor:		63.6%	53.5%	70.0%	53.5%	89.2%	
Concentration Trend:		Stable	No Trend	No Trend	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-BB89
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-BB89 CONCENTRATION (ug/L)					
1	24-Mar-11	0.25	0.25	0.25	0.25	0.25	
2	5-Jul-11	0.1	0.05	0.5	0.1	0.1	
3	12-Oct-11	0.25	0.25	0.25	0.25	0.25	
4	12-Dec-13	0.25	0.25	0.12	0.11	0.25	
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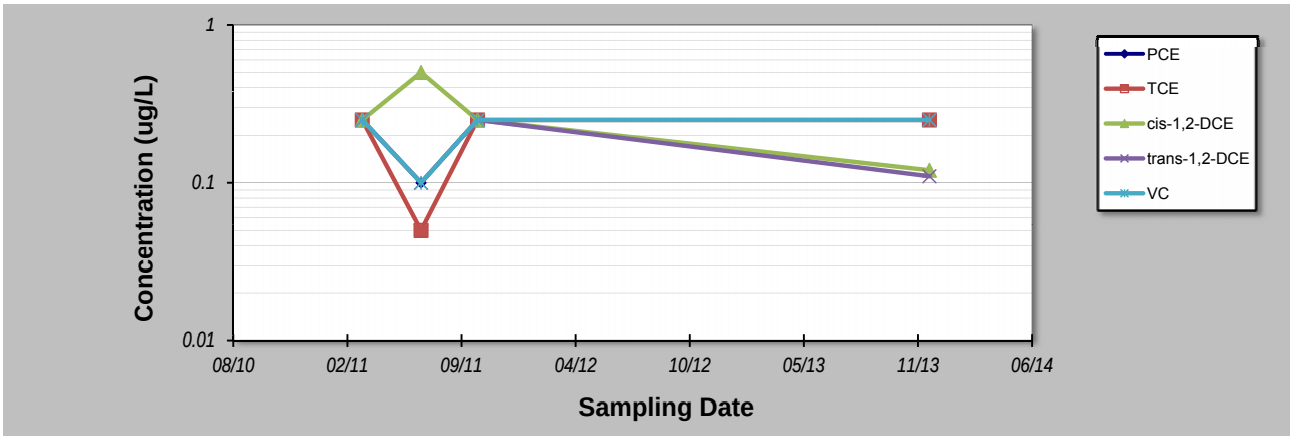
20							
Coefficient of Variation:		0.35	0.50	0.57	0.47	0.35	
Mann-Kendall Statistic (S):		1	1	-3	-1	1	
Confidence Factor:		50.0%	50.0%	72.9%	50.0%	50.0%	
Concentration Trend:		No Trend	No Trend	Stable	Stable	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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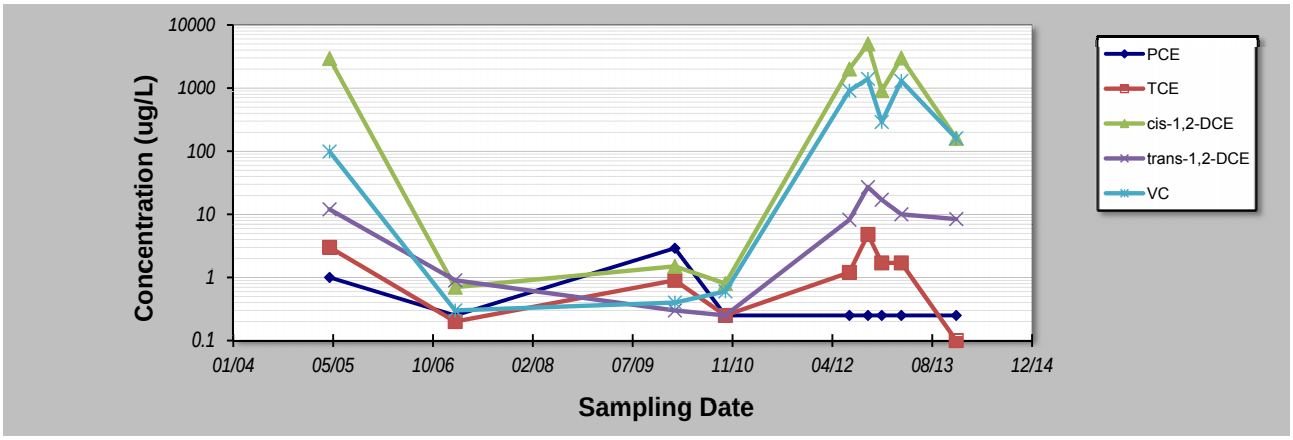
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW11
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW11 CONCENTRATION (ug/L)					
1	10-May-05	1	3	2940	12	98.7	
2	29-Jan-07	0.25	0.2	0.7	0.9	0.3	
3	2-Feb-10	2.9	0.9	1.5	0.3	0.4	
4	13-Oct-10	0.25	0.25	0.8	0.25	0.6	
5	25-Jun-12	0.25	1.2	2000	8.2	910	
6	26-Sep-12	0.25	4.8	5000	27	1400	
7	4-Dec-12	0.25	1.7	910	17	290	
8	12-Mar-13	0.25	1.7	3000	10	1300	
9	12-Dec-13	0.25	0.10	160	8.4	160	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		1.41	1.00	1.15	0.94	1.25	
Mann-Kendall Statistic (S):		-11	1	8	6	16	
Confidence Factor:		84.6%	50.0%	76.2%	69.4%	94.0%	
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	Prob. Increasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW12
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW12 CONCENTRATION (ug/L)						
1	14-Mar-05	9.1	118	7660	81	16.5		
2	10-May-05	645	2560	7980	53	39.4		
3	29-Jan-07	0.25	0.4	20	0.8	9.5		
4	13-Oct-10	0.25	0.25	0.25	0.25	0.4		
5	28-Mar-11	2.5	2.5	1600	11	320		
6	27-Jun-11	0.1	0.8	290	1.1	80		
7	5-Oct-11	1.25	1.25	290	1.25	140		
8	17-Jan-12	0.1	0.4	89	0.9	60		
9	27-Jun-12	0.25	0.25	1.5	0.27	0.8		
10	27-Sep-12	0.25	0.26	1.6	0.29	2.1		
11	4-Dec-12	0.25	0.25	87	3.5	98		
12	12-Mar-13	0.25	0.25	0.3	0.25	0.36		
13	12-Dec-13	0.25	0.12	0.28	0.16	0.28		
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16								
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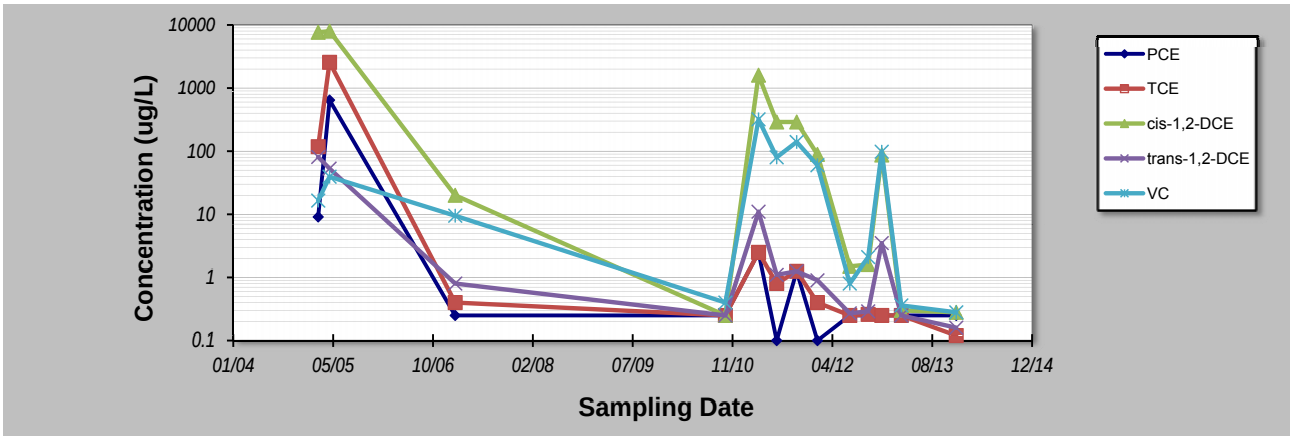
18								
19								
20								
Coefficient of Variation:		3.52	3.43	2.08	2.14	1.53		
Mann-Kendall Statistic (S):		-24	-49	-41	-39	-20		
Confidence Factor:		91.8%	99.9%	99.4%	99.1%	87.4%		
Concentration Trend:		Prob. Decreasing	Decreasing	Decreasing	Decreasing	No Trend		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW16
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW16 CONCENTRATION (ug/L)					
1	10-May-05	5770	3500	1830	10	27.6	
2	29-Jan-07	180	1800	7200	110	510	
3	24-Jan-12	0.25	0.25	0.25	0.25	0.1	
4	6-Dec-12	0.25	0.65	0.89	0.25	0.23	
5	11-Dec-13	0.25	0.83	1.2	0.17	0.39	
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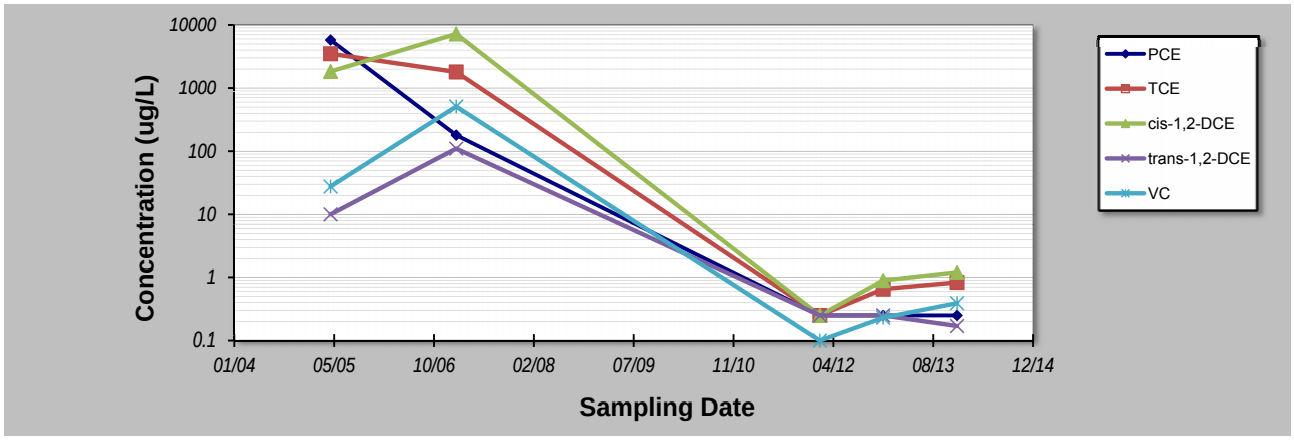
Coefficient of Variation:		2.15	1.48	1.73	2.00	2.09	
Mann-Kendall Statistic (S):		-7	-4	-2	-7	-2	
Confidence Factor:		92.1%	75.8%	59.2%	92.1%	59.2%	
Concentration Trend:		Prob. Decreasing	No Trend	No Trend	Prob. Decreasing	No Trend	



Notes:

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4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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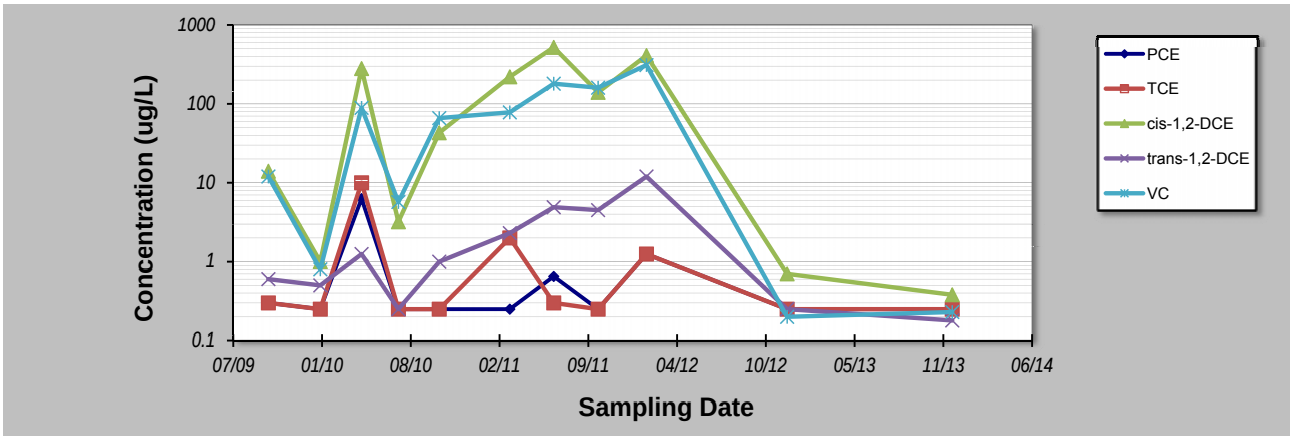
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW28
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW28 CONCENTRATION (ug/L)						
1	23-Sep-09	0.3	0.3	14	0.6	12		
2	18-Jan-10	0.25	0.25	1	0.5	0.8		
3	21-Apr-10	6.3	10	280	1.25	89		
4	13-Jul-10	0.25	0.25	3.2	0.25	5.7		
5	13-Oct-10	0.25	0.25	43	1	66		
6	21-Mar-11	0.25	2	220	2.3	78		
7	28-Jun-11	0.65	0.3	520	4.9	180		
8	6-Oct-11	0.25	0.25	140	4.5	160		
9	23-Jan-12	1.25	1.25	410	12	310		
10	5-Dec-12	0.25	0.25	0.70	0.25	0.20		
11	12-Dec-13	0.25	0.25	0.38	0.18	0.23		
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.94	2.09	1.25	1.41	1.21		
Mann-Kendall Statistic (S):		-6	-9	-1	6	7		
Confidence Factor:		64.8%	72.9%	50.0%	64.8%	67.6%		
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend		



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW29
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW29 CONCENTRATION (ug/L)						
1	23-Sep-09	1.25	0.8	620	6.3	430		
2	18-Jan-10	0.25	0.2	2	1.5	4.5		
3	20-Apr-10	0.25	1.5	9.8	0.8	17		
4	12-Jul-10	0.25	0.25	4	0.25	6.9		
5	11-Oct-10	0.25	0.25	0.8	0.25	1.1		
6	22-Mar-11	0.25	2	8.9	0.25	6.2		
7	28-Jun-11	0.1	0.6	4.6	0.2	4.8		
8	4-Oct-11	0.25	0.25	1.2	0.25	2.8		
9	3-Dec-12	0.25	0.25	0.70	0.25	0.25		
10	11-Dec-13	0.25	0.17	0.84	0.20	0.25		
11								
12								
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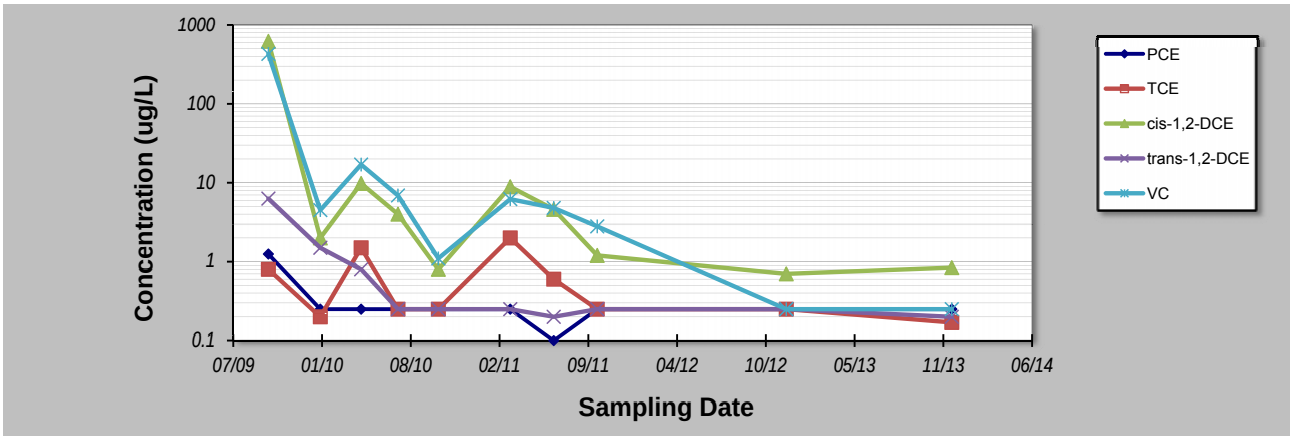
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.97	1.01	2.99	1.85	2.84		
Mann-Kendall Statistic (S):		-11	-11	-23	-30	-30		
Confidence Factor:		81.0%	81.0%	97.7%	99.7%	99.7%		
Concentration Trend:		Stable	No Trend	Decreasing	Decreasing	Decreasing		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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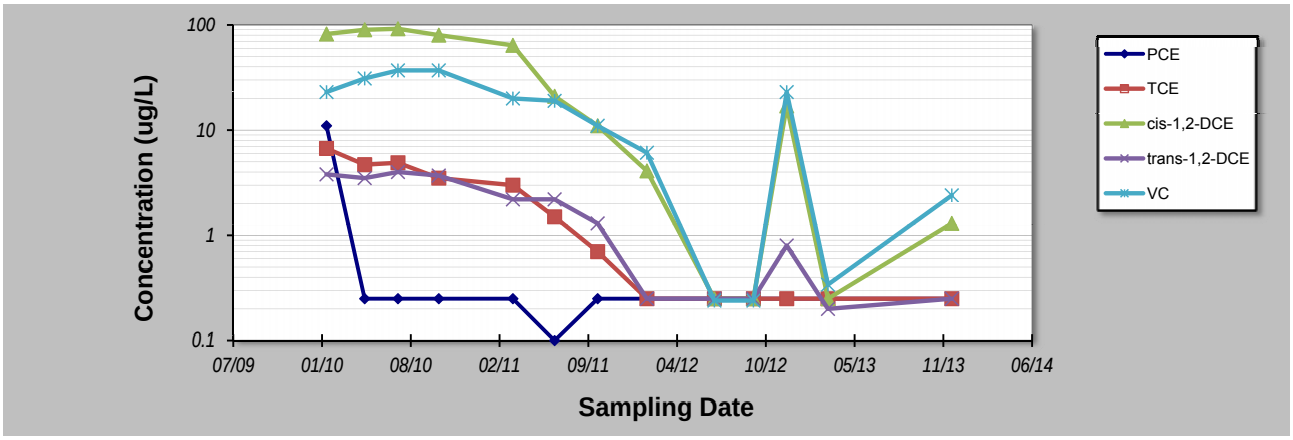
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW30
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW30 CONCENTRATION (ug/L)					
1	1-Feb-10	11	6.7	82	3.8	23	
2	28-Apr-10	0.25	4.7	90	3.5	31	
3	12-Jul-10	0.25	4.9	92	4	37	
4	12-Oct-10	0.25	3.5	80	3.7	37	
5	28-Mar-11	0.25	3	64	2.2	20	
6	30-Jun-11	0.1	1.5	21	2.2	19	
7	5-Oct-11	0.25	0.7	11	1.3	11	
8	24-Jan-12	0.25	0.25	4.1	0.25	6.1	
9	24-Jun-12	0.25	0.25	0.25	0.25	0.24	
10	20-Sep-12	0.25	0.25	0.25	0.25	0.24	
11	4-Dec-12	0.25	0.25	17	0.8	23	
12	7-Mar-13	0.25	0.25	0.25	0.20	0.34	
13	11-Dec-13	0.25	0.25	1.3	0.25	2.4	
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		2.80	1.11	1.09	0.89	0.85	
Mann-Kendall Statistic (S):		-9	-61	-55	-57	-43	
Confidence Factor:		68.4%	>99.9%	>99.9%	>99.9%	99.6%	
Concentration Trend:		No Trend	Decreasing	Decreasing	Decreasing	Decreasing	



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW31
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW31 CONCENTRATION (ug/L)					
1	2-Feb-10	1.1	48	680	11	75	
2	28-Apr-10	0.25	3.7	32	2.6	29	
3	18-Oct-10	0.25	0.7	3.2	2.2	7.9	
4	28-Mar-11	0.25	0.25	0.7	0.25	0.7	
5	30-Jun-11	0.1	0.3	0.9	0.6	1.2	
6	10-Oct-11	0.25	0.25	1.1	0.25	1.8	
7	18-Jan-12	0.1	0.3	1.4	0.5	1.9	
8	11-Dec-13	0.25	0.25	0.64	0.25	0.97	
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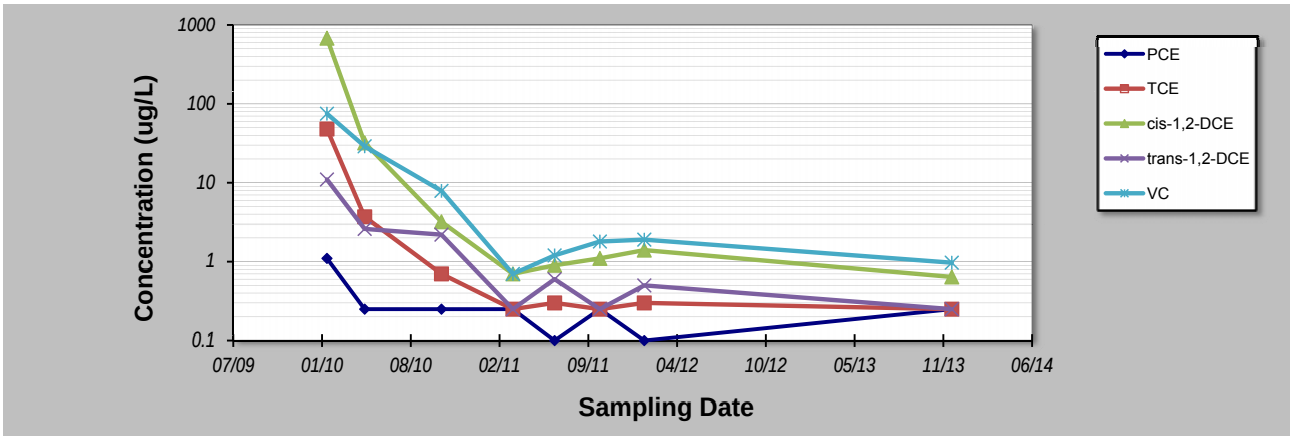
Coefficient of Variation:		1.01	2.49	2.65	1.66	1.77	
Mann-Kendall Statistic (S):		-11	-18	-16	-19	-14	
Confidence Factor:		88.7%	98.4%	96.9%	98.9%	94.6%	
Concentration Trend:		No Trend	Decreasing	Decreasing	Decreasing	Prob. Decreasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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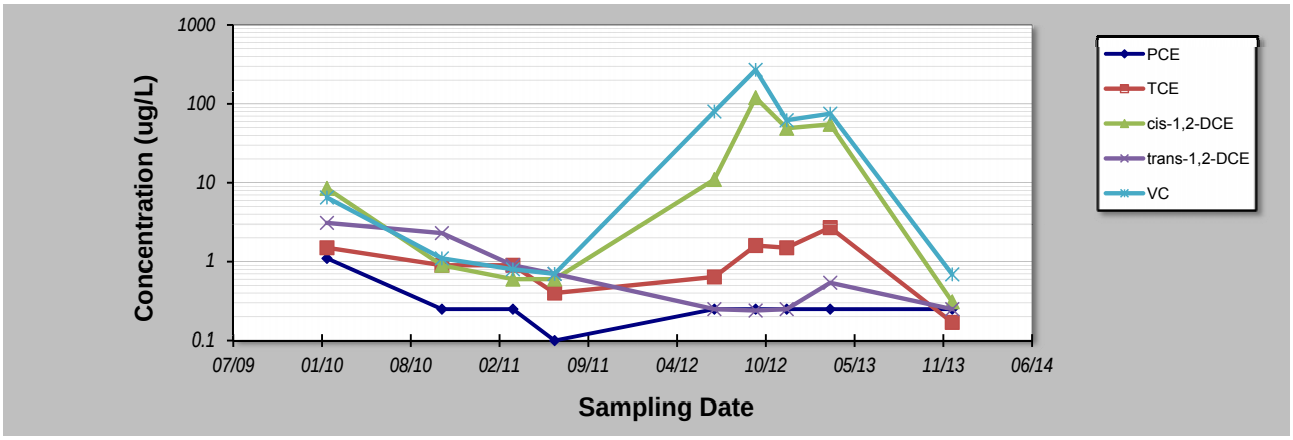
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW32
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW32 CONCENTRATION (ug/L)					
1	2-Feb-10	1.1	1.5	8.5	3.1	6.5	
2	19-Oct-10	0.25	0.9	0.9	2.3	1.1	
3	28-Mar-11	0.25	0.9	0.6	0.9	0.8	
4	30-Jun-11	0.1	0.4	0.6	0.7	0.7	
5	24-Jun-12	0.25	0.64	11	0.25	80	
6	25-Sep-12	0.25	1.6	120	0.24	270	
7	4-Dec-12	0.25	1.5	49	0.25	62	
8	12-Mar-13	0.25	2.7	55	0.54	75	
9	12-Dec-13	0.25	0.17	0.31	0.25	0.69	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		0.90	0.67	1.49	1.10	1.59	
Mann-Kendall Statistic (S):		-5	0	5	-23	0	
Confidence Factor:		65.7%	46.0%	65.7%	99.1%	46.0%	
Concentration Trend:		Stable	Stable	No Trend	Decreasing	No Trend	



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW33
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW33 CONCENTRATION (ug/L)					
1	21-Oct-10	0.25	0.25	3.8	0.25	3.6	
2	29-Mar-11	0.25	0.25	9.1	0.25	5.8	
3	5-Jul-11	0.1	0.05	11	0.1	5.6	
4	11-Oct-11	0.25	0.25	13	0.25	6	
5	19-Jan-12	0.25	0.25	34	0.25	9.4	
6	26-Jun-12	0.25	0.25	3.0	0.25	2	
7	25-Sep-12	0.25	0.25	1.6	0.25	1.6	
8	7-Dec-12	0.25	0.25	2.5	0.25	0.77	
9	11-Mar-13	0.25	0.25	0.87	0.25	0.63	
10	12-Dec-13	0.25	0.25	1.4	0.25	0.98	
11							
12							
13							
14							
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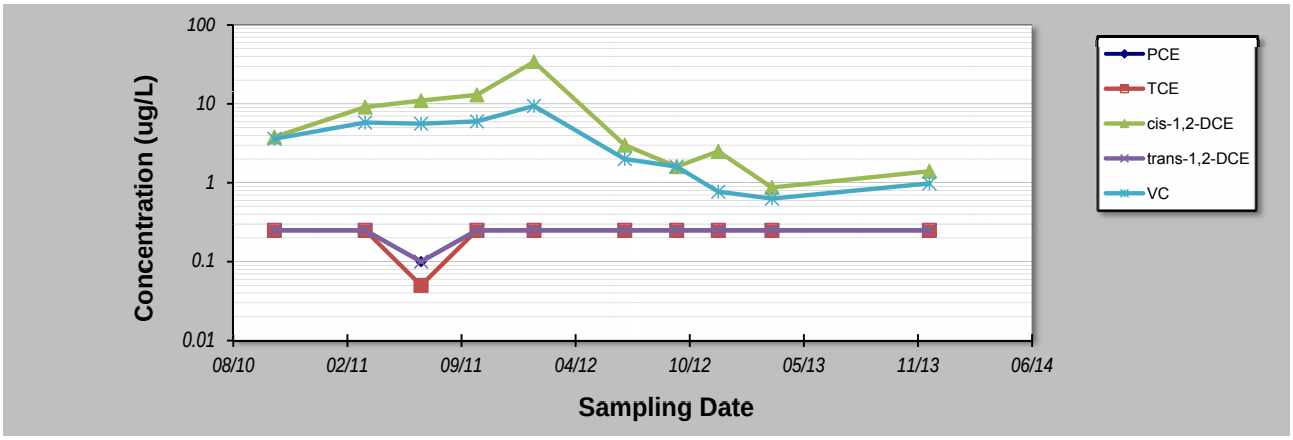
16							
17							
18							
19							
20							
Coefficient of Variation:		0.20	0.27	1.26	0.20	0.81	
Mann-Kendall Statistic (S):		5	5	-21	5	-23	
Confidence Factor:		63.6%	63.6%	96.4%	63.6%	97.7%	
Concentration Trend:		No Trend	No Trend	Decreasing	No Trend	Decreasing	



Notes:

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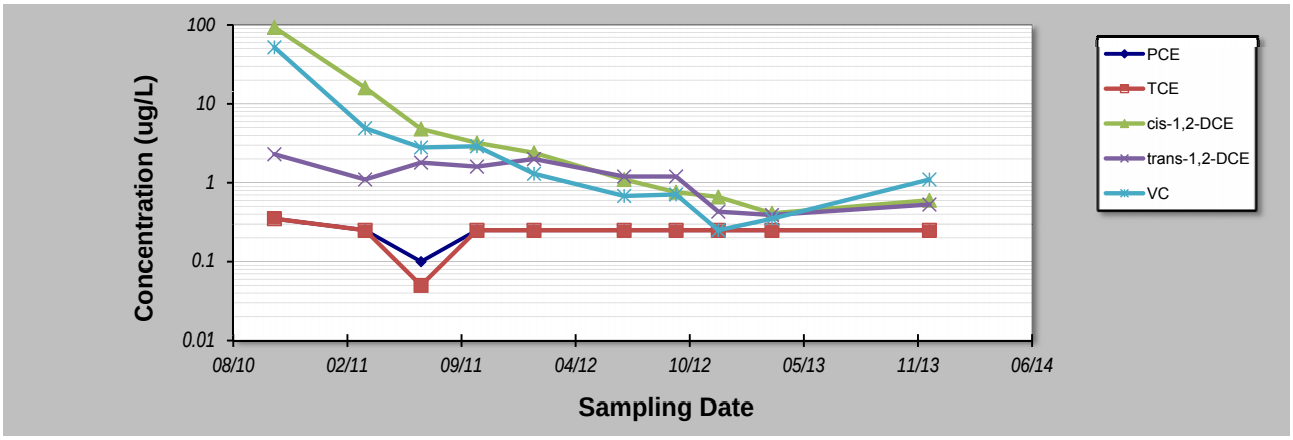
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW34
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW34 CONCENTRATION (ug/L)					
1	21-Oct-10	0.35	0.35	93	2.3	52	
2	29-Mar-11	0.25	0.25	16	1.1	4.9	
3	5-Jul-11	0.1	0.05	4.8	1.8	2.8	
4	11-Oct-11	0.25	0.25	3.2	1.6	2.9	
5	19-Jan-12	0.25	0.25	2.4	2	1.3	
6	25-Jun-12	0.25	0.25	1.1	1.2	0.68	
7	24-Sep-12	0.25	0.25	0.76	1.2	0.71	
8	7-Dec-12	0.25	0.25	0.66	0.43	0.25	
9	11-Mar-13	0.25	0.25	0.41	0.39	0.35	
10	12-Dec-13	0.25	0.25	0.60	0.53	1.1	
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		0.24	0.31	2.34	0.53	2.39	
Mann-Kendall Statistic (S):		-3	-3	-43	-26	-31	
Confidence Factor:		56.9%	56.9%	>99.9%	98.9%	99.8%	
Concentration Trend:		Stable	Stable	Decreasing	Decreasing	Decreasing	



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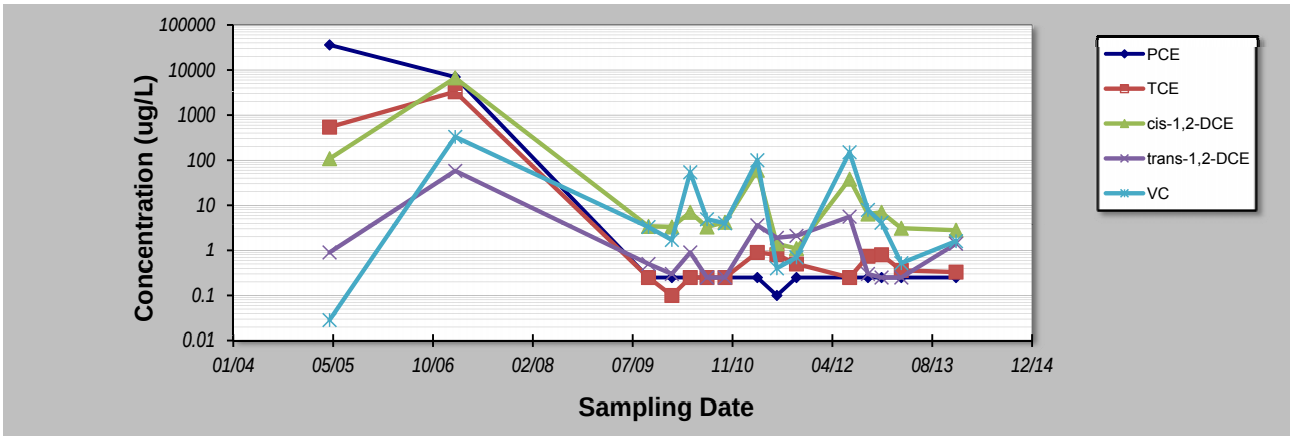
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW4
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-EW4 CONCENTRATION (ug/L)						
1	10-May-05	36100	541	108	0.9	0.029		
2	29-Jan-07	7000	3300	6700	58	330		
3	23-Sep-09	0.25	0.25	3.4	0.5	3.3		
4	18-Jan-10	0.25	0.1	3.3	0.3	1.7		
5	20-Apr-10	0.25	0.25	7	0.9	54		
6	13-Jul-10	0.25	0.25	3.3	0.25	4.9		
7	11-Oct-10	0.25	0.25	4.2	0.25	4		
8	22-Mar-11	0.25	0.9	60	3.6	100		
9	28-Jun-11	0.1	0.8	1.4	1.9	0.4		
10	4-Oct-11	0.25	0.5	1.1	2.1	0.7		
11	26-Jun-12	0.25	0.25	38	5.6	150		
12	26-Sep-12	0.25	0.74	6.4	0.3	7.9		
13	3-Dec-12	0.25	0.8	7	0.25	4.1		
14	12-Mar-13	0.25	0.36	3.1	0.25	0.52		
15	11-Dec-13	0.25	0.33	2.8	1.4	1.6		
16								
17								
18								
19								
20								
Coefficient of Variation:		3.26	3.33	3.72	2.88	2.05		
Mann-Kendall Statistic (S):		-27	0	-33	-13	-7		
Confidence Factor:		89.9%	48.0%	94.3%	72.1%	61.5%		
Concentration Trend:		No Trend	No Trend	Prob. Decreasing	No Trend	No Trend		



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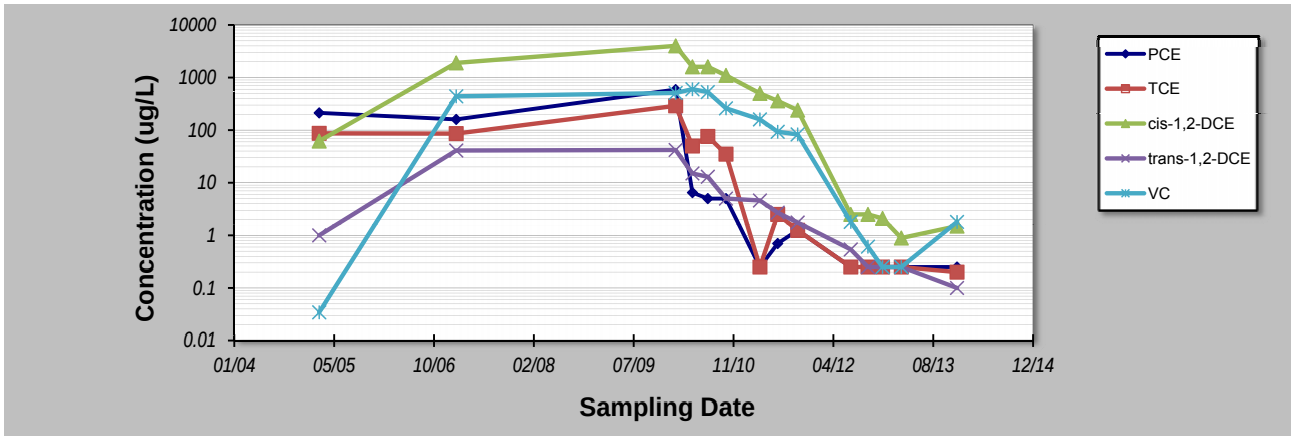
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-EW6
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	**Sampling Date**	**WELL 24-EW6 CONCENTRATION (ug/L)**					
1	14-Mar-05	213	87	62	1	0.035	
2	29-Jan-07	160	86	1900	41	440	
3	1-Feb-10	590	290	4000	42	510	
4	26-Apr-10	6.5	50	1600	15	600	
5	12-Jul-10	5	76	1600	13	530	
6	11-Oct-10	5	35	1100	5	260	
7	30-Mar-11	0.25	0.25	500	4.6	160	
8	27-Jun-11	0.7	2.5	360	2.7	93	
9	5-Oct-11	1.25	1.25	240	1.75	83	
10	27-Jun-12	0.25	0.25	2.5	0.54	1.8	
11	21-Sep-12	0.25	0.25	2.5	0.25	0.61	
12	3-Dec-12	0.25	0.25	2.1	0.25	0.25	
13	7-Mar-13	0.25	0.25	0.89	0.25	0.25	
14	11-Dec-13	0.25	0.20	1.5	0.10	1.8	
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		2.34	1.75	1.41	1.59	1.20	
Mann-Kendall Statistic (S):		-65	-71	-69	-70	-47	
Confidence Factor:		>99.9%	>99.9%	>99.9%	>99.9%	99.5%	
Concentration Trend:		Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	



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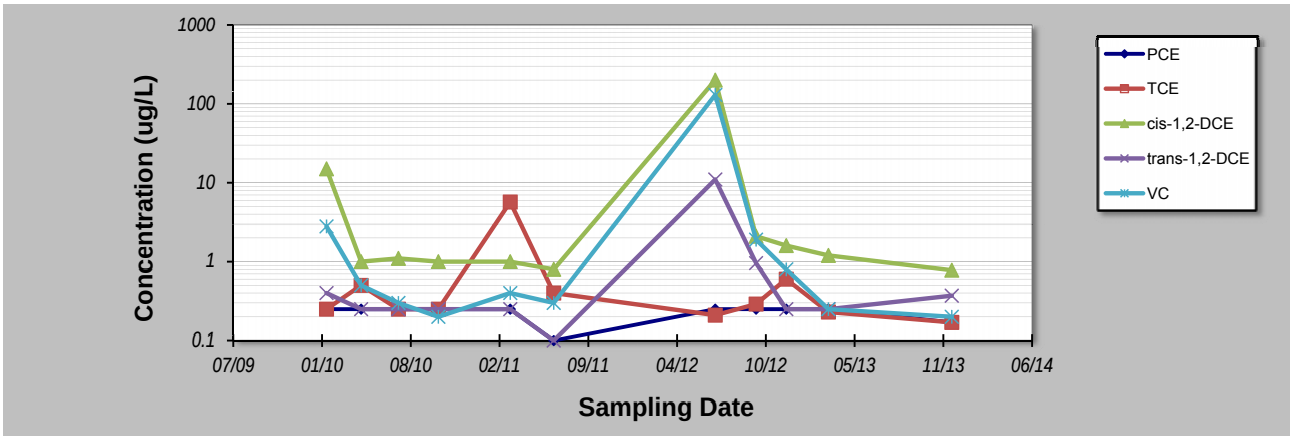
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-IW21
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-IW21 CONCENTRATION (ug/L)						
1	1-Feb-10	0.25	0.25	15	0.4	2.8		
2	20-Apr-10	0.25	0.5	1	0.25	0.5		
3	13-Jul-10	0.25	0.25	1.1	0.25	0.3		
4	11-Oct-10	0.25	0.25	1	0.25	0.2		
5	22-Mar-11	0.25	5.7	1	0.25	0.4		
6	28-Jun-11	0.1	0.4	0.8	0.1	0.3		
7	26-Jun-12	0.25	0.21	200	11	130		
8	26-Sep-12	0.25	0.29	2.1	0.96	1.9		
9	3-Dec-12	0.25	0.60	1.6	0.25	0.80		
10	8-Mar-13	0.25	0.23	1.2	0.25	0.25		
11	11-Dec-13	0.17	0.17	0.78	0.37	0.20		
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.21	2.02	2.91	2.47	3.11		
Mann-Kendall Statistic (S):		-9	-12	-8	2	-13		
Confidence Factor:		72.9%	79.9%	70.3%	53.0%	82.1%		
Concentration Trend:		Stable	No Trend	No Trend	No Trend	No Trend		



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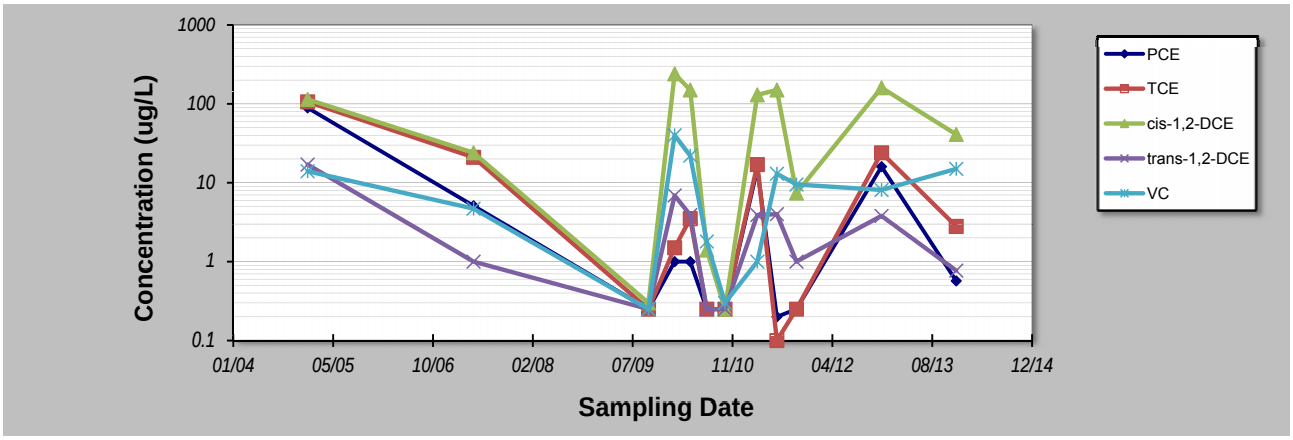
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-IW5
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-IW5 CONCENTRATION (ug/L)					
1	20-Jan-05	89	106	114	17	14	
2	1-May-07	5.1	21	24	1	4.7	
3	23-Sep-09	0.25	0.25	0.3	0.25	0.25	
4	1-Feb-10	1	1.5	240	6.9	40	
5	20-Apr-10	1	3.5	150	3.9	22	
6	12-Jul-10	0.25	0.25	1.4	0.25	1.8	
7	11-Oct-10	0.25	0.25	0.25	0.25	0.3	
8	22-Mar-11	15	17	130	3.9	1	
9	28-Jun-11	0.2	0.1	150	4	13	
10	4-Oct-11	0.25	0.25	7.4	1	9.5	
11	3-Dec-12	16	24	160	3.8	8.1	
12	12-Dec-13	0.57	2.8	41	0.77	15	
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		2.36	2.04	0.97	1.32	1.06	
Mann-Kendall Statistic (S):		-13	-12	5	-11	2	
Confidence Factor:		79.0%	77.0%	60.6%	74.9%	52.7%	
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-IW8
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-IW8 CONCENTRATION (ug/L)					
1	20-Jan-05	4560	1520	2270	44	140	
2	1-May-07	0.6	1.8	27	0.7	62	
3	26-Apr-10	2.3	2.6	1.3	0.25	0.2	
4	11-Oct-10	0.25	0.25	0.5	0.25	0.4	
5	30-Mar-11	2.1	0.8	0.25	0.25	0.25	
6	27-Jun-11	1.0	0.5	620	5	180	
7	5-Oct-11	10	10	2700	10	630	
8	26-Jun-12	0.25	0.25	0.25	0.25	0.25	
9	21-Sep-12	0.25	0.31	1.6	0.25	0.69	
10	3-Dec-12	2	0.25	0.25	0.25	0.25	
11	7-Mar-13	0.25	0.25	1.1	0.25	0.39	
12	11-Dec-13	0.25	0.24	1.1	0.14	1.2	
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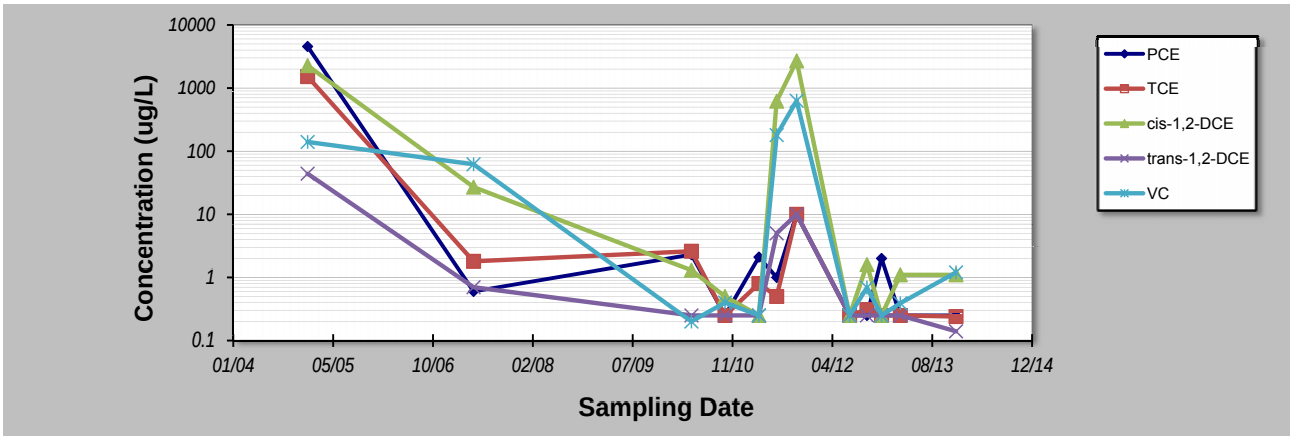
20							
Coefficient of Variation:		3.45	3.42	2.05	2.45	2.16	
Mann-Kendall Statistic (S):		-26	-40	-18	-27	-3	
Confidence Factor:		95.7%	99.7%	87.5%	96.3%	55.4%	
Concentration Trend:		Decreasing	Decreasing	No Trend	Decreasing	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-04
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-04 CONCENTRATION (ug/L)					
1	6-Dec-04	52	138	139	1	2	
2	1-May-07	0.3	3.6	54	1.5	9.7	
3	11-Oct-11	0.25	0.25	0.25	0.25	0.4	
4	6-Dec-12	0.25	0.51	300	0.52	180	
5	12-Dec-13	0.25	0.23	67	0.18	86	
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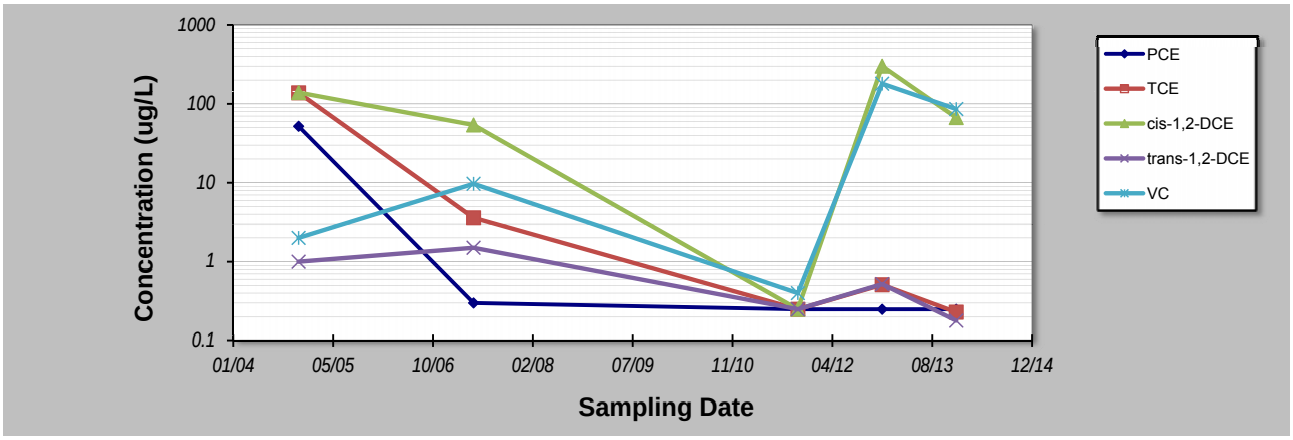
Coefficient of Variation:		2.18	2.15	1.04	0.81	1.40	
Mann-Kendall Statistic (S):		-7	-8	0	-6	4	
Confidence Factor:		92.1%	95.8%	40.8%	88.3%	75.8%	
Concentration Trend:		Prob. Decreasing	Decreasing	No Trend	Stable	No Trend	



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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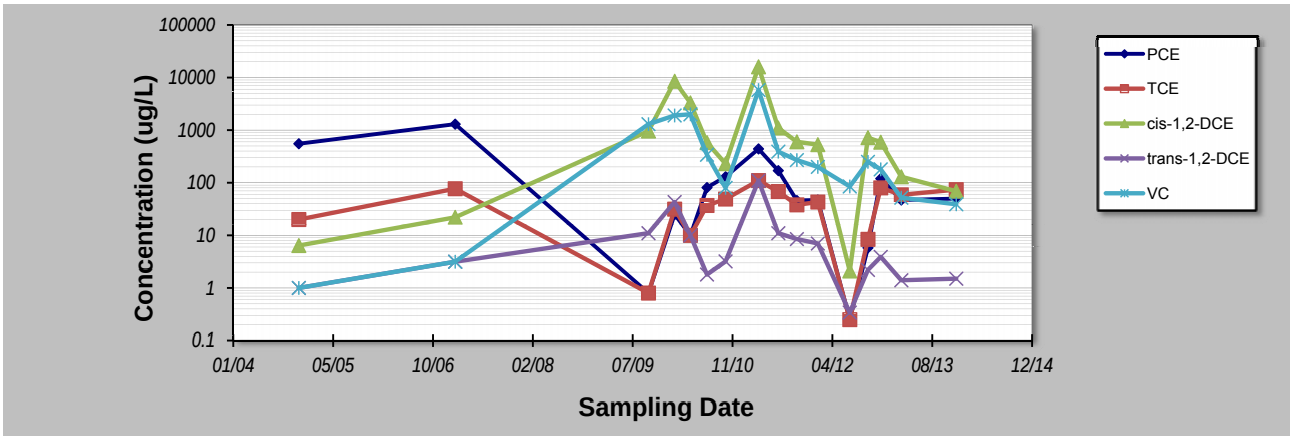
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-11
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-11 CONCENTRATION (ug/L)						
1	7-Dec-04	552	20	6.4	1	1		
2	29-Jan-07	1300	77	22	3.15	3.15		
3	23-Sep-09	0.8	0.8	960	11	1300		
4	1-Feb-10	25	31.5	8500	43	1900		
5	21-Apr-10	10	10	3300	10	2000		
6	13-Jul-10	81	37	580	1.8	340		
7	14-Oct-10	130	49	230	3.2	80		
8	28-Mar-11	440	110	16000	110	5800		
9	5-Jul-11	170	68	1100	11	390		
10	6-Oct-11	46	38	600	8.5	270		
11	19-Jan-12	47	43	530	7	200		
12	27-Jun-12	0.25	0.25	2.1	0.34	85		
13	26-Sep-12	5.8	8.4	720	2.2	250		
14	29-Nov-12	120	80	590	3.9	180		
15	12-Mar-13	47	59	130	1.4	52		
16	12-Dec-13	50	74	69	1.5	39		
17								
18								
19								
20								
Coefficient of Variation:		1.78	0.73	2.05	2.02	1.84		
Mann-Kendall Statistic (S):		-17	26	-18	-27	-26		
Confidence Factor:		76.1%	86.7%	77.5%	87.7%	86.7%		
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend		



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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-14
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-14 CONCENTRATION (ug/L)						
1	14-Dec-04	1	1	1	1	1		
2	26-Apr-10	0.25	0.25	94	0.25	3		
3	14-Oct-10	0.25	0.25	100	0.25	6.9		
4	5-Jul-11	0.1	0.5	150	0.7	9.6		
5	5-Oct-11	0.5	0.5	150	1	9.3		
6	18-Jan-12	0.65	0.65	150	1.4	5.2		
7	24-Jun-12	0.25	0.39	94	0.62	19		
8	19-Sep-12	0.25	0.36	110	0.65	26		
9	29-Nov-12	0.25	0.25	91	1.1	23		
10	6-Mar-13	0.25	0.29	63	0.41	15		
11	12-Dec-13	0.25	0.25	62	0.50	29		
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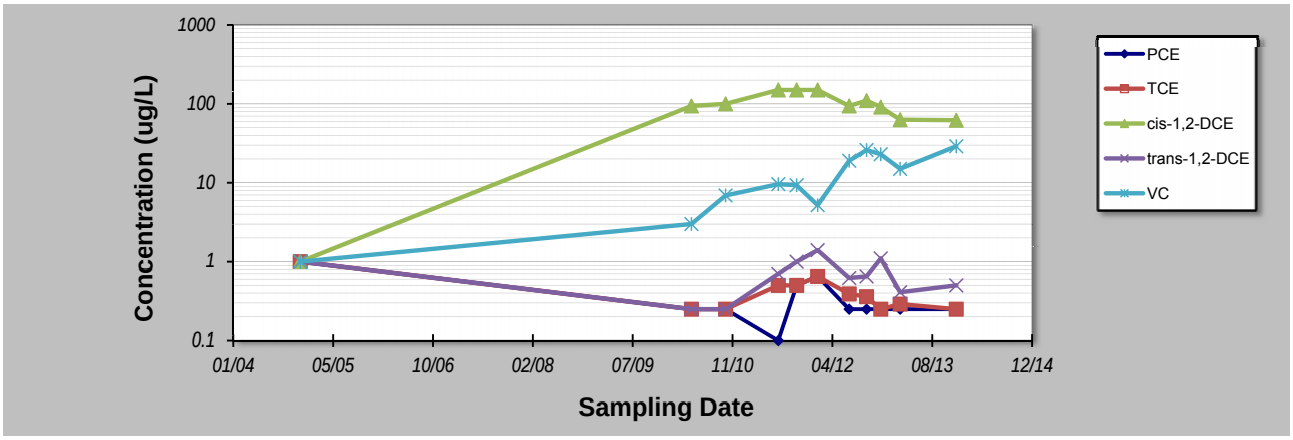
18								
19								
20								
Coefficient of Variation:		0.71	0.54	0.46	0.52	0.72		
Mann-Kendall Statistic (S):		-10	-18	-11	1	39		
Confidence Factor:		75.3%	90.5%	77.7%	50.0%	99.9%		
Concentration Trend:		Stable	Prob. Decreasing	Stable	No Trend	Increasing		



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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-16
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-16 CONCENTRATION (ug/L)					
1	14-Dec-04	1	1	1	1	1	
2	27-Apr-10	0.25	0.25	0.7	0.25	0.4	
3	21-Sep-12	0.25	0.25	12	0.25	7.3	
4	6-Mar-13	0.25	0.25	74	0.25	8.8	
5	12-Dec-13	0.25	0.25	71	0.16	7.4	
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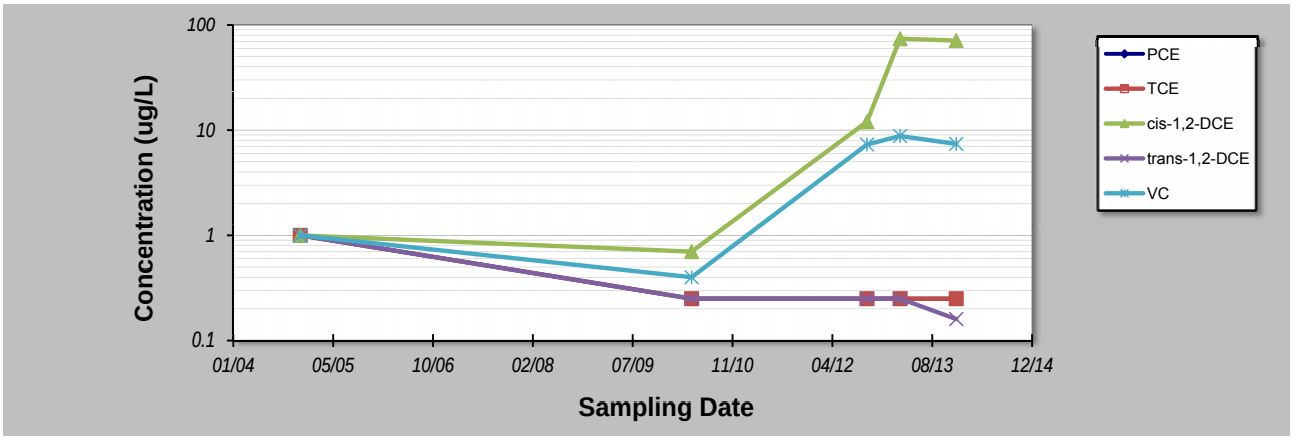
Coefficient of Variation:		0.84	0.84	1.18	0.91	0.79	
Mann-Kendall Statistic (S):		-4	-4	6	-7	6	
Confidence Factor:		75.8%	75.8%	88.3%	92.1%	88.3%	
Concentration Trend:		Stable	Stable	No Trend	Prob. Decreasing	No Trend	



Notes:

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-25
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-25 CONCENTRATION (ug/L)					
1	27-Apr-10	0.25	0.25	2.4	1.2	3	
2	28-Mar-11	0.25	0.25	2.5	0.6	3.2	
3	5-Jul-11	0.1	0.1	0.3	0.1	0.1	
4	5-Oct-11	0.25	0.25	1.5	0.25	1	
5	23-Jan-12	0.25	0.25	1.5	0.25	1.2	
6	24-Jun-12	0.25	0.25	1.6	0.30	1.0	
7	6-Dec-12	0.25	0.25	1.4	0.25	0.86	
8	11-Dec-13	0.25	0.25	1.8	0.34	0.72	
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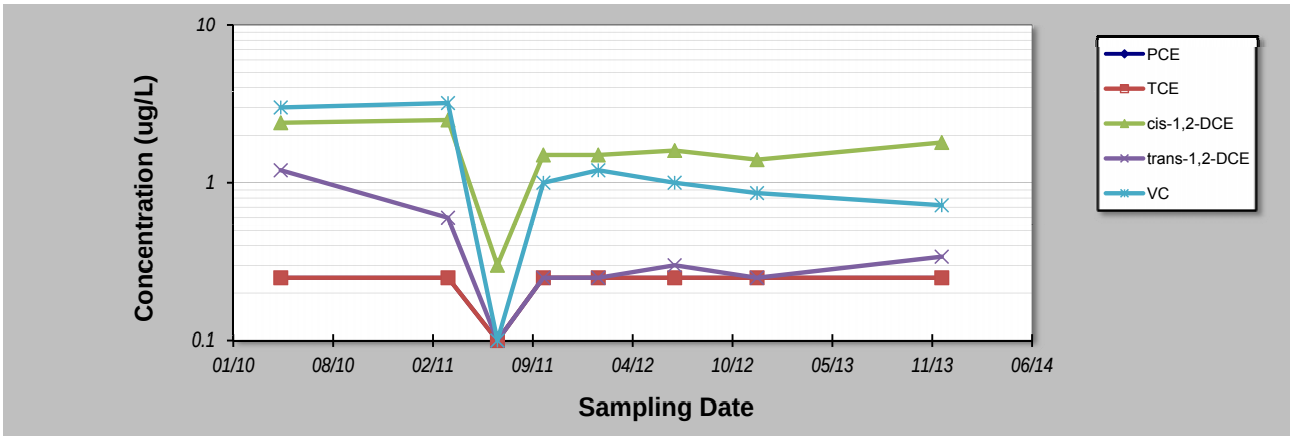
Coefficient of Variation:		0.23	0.23	0.42	0.85	0.80	
Mann-Kendall Statistic (S):		3	3	-3	-3	-13	
Confidence Factor:		59.4%	59.4%	59.4%	59.4%	92.9%	
Concentration Trend:		No Trend	No Trend	Stable	Stable	Prob. Decreasing	



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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-26
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-26 CONCENTRATION (ug/L)					
1	18-Oct-10	0.25	7.3	60	1.8	53	
2	11-Oct-11	0.25	0.25	2.9	0.25	3.7	
3	23-Jan-12	0.25	0.25	3	0.25	3.4	
4	24-Jun-12	0.25	0.37	4.3	0.25	2.4	
5	24-Sep-12	0.25	0.43	3.9	0.25	2.6	
6	6-Dec-12	0.25	0.40	1.4	0.25	1.4	
7	11-Mar-13	0.25	0.32	1.2	0.25	1.7	
8	11-Dec-13	0.25	0.25	0.67	0.25	0.90	
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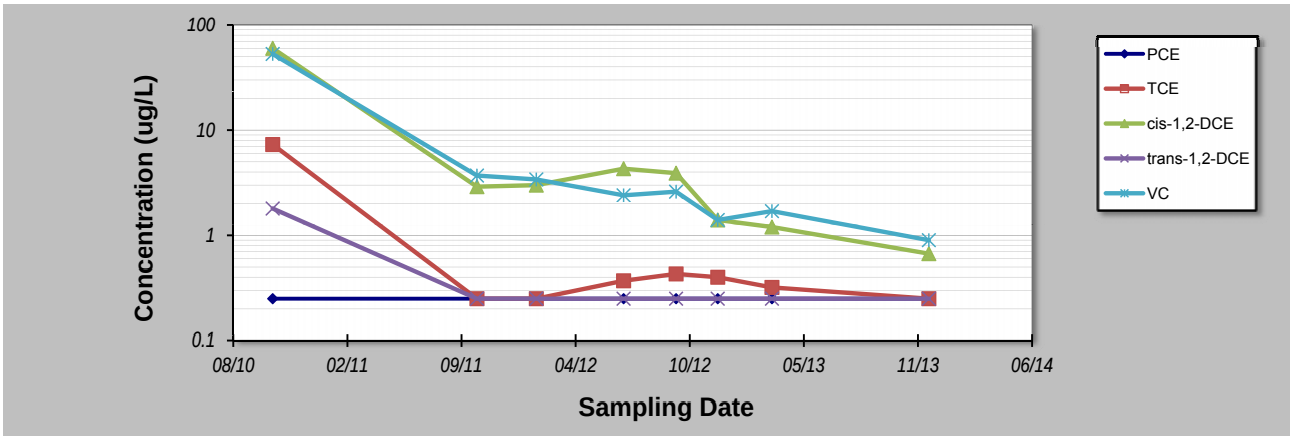
20							
Coefficient of Variation:		0.00	2.06	2.11	1.23	2.08	
Mann-Kendall Statistic (S):		0	-5	-18	-7	-24	
Confidence Factor:		45.2%	68.3%	98.4%	76.4%	99.9%	
Concentration Trend:		Stable	No Trend	Decreasing	No Trend	Decreasing	



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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-27
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-27 CONCENTRATION (ug/L)					
1	8-Jul-10	0.25	0.25	0.25	0.90	0.30	
2	11-Oct-11	0.25	0.25	0.25	0.80	2.8	
3	18-Jan-12	0.25	0.25	4.9	0.80	25	
4	12-Dec-13	0.21	0.16	0.26	0.17	0.48	
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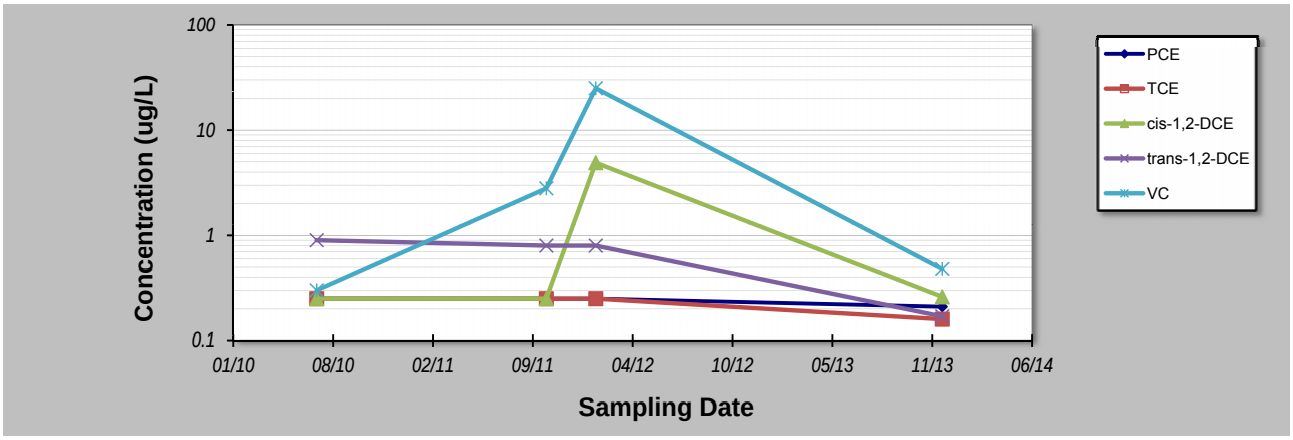
Coefficient of Variation:		0.08	0.20	1.64	0.50	1.67	
Mann-Kendall Statistic (S):		-3	-3	3	-5	2	
Confidence Factor:		72.9%	72.9%	72.9%	89.6%	62.5%	
Concentration Trend:		Stable	Stable	No Trend	Stable	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-28
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-28 CONCENTRATION (ug/L)					
1	11-Oct-11	0.25	0.9	78	0.6	5.5	
2	17-Jan-12	0.1	2.2	90	1.2	4.2	
3	26-Jun-12	0.25	0.59	12	1.3	15	
4	25-Sep-12	0.25	1.3	14	1.7	18	
5	7-Dec-12	0.25	0.39	1.8	0.34	2.7	
6	12-Mar-13	0.25	0.25	0.80	0.74	0.45	
7	12-Dec-13	0.25	0.17	1.3	0.86	1.7	
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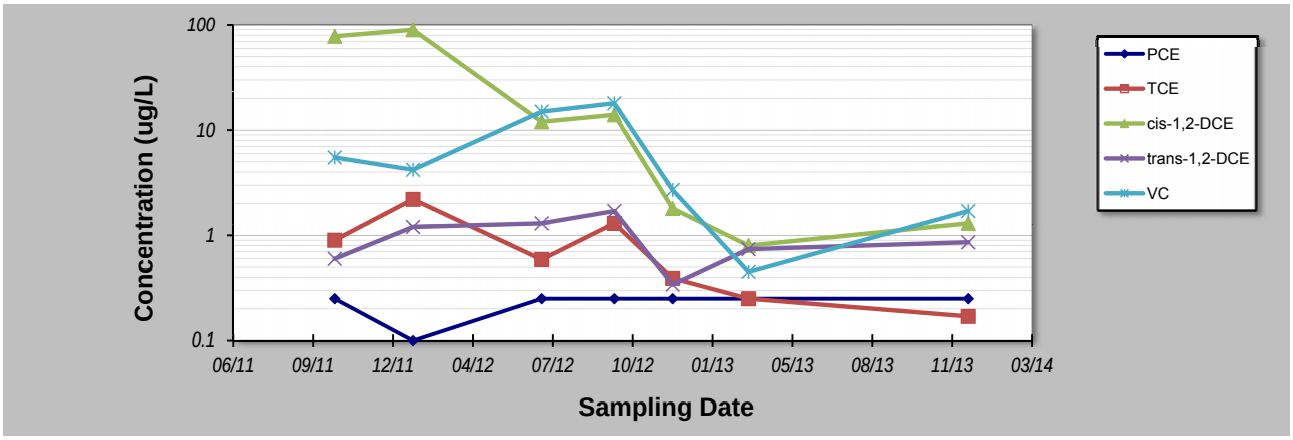
Coefficient of Variation:		0.25	0.87	1.36	0.48	1.01	
Mann-Kendall Statistic (S):		4	-15	-15	1	-9	
Confidence Factor:		66.7%	98.5%	98.5%	50.0%	88.1%	
Concentration Trend:		No Trend	Decreasing	Decreasing	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-36
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-36 CONCENTRATION (ug/L)						
1	8-Jul-10	0.65	5.6	170	9.8	53		
2	19-Oct-10	0.25	0.5	2.9	7	2.3		
3	11-Oct-11	0.25	0.25	0.25	3.4	0.2		
4	26-Jun-12	0.25	0.25	0.87	2.3	2.3		
5	21-Sep-12	0.25	0.25	0.37	2.1	0.78		
6	7-Dec-12	0.25	0.21	2.1	1.9	7.4		
7	11-Mar-13	0.25	0.25	0.30	1.5	0.66		
8	11-Dec-13	0.25	0.25	0.34	0.38	0.43		
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11								
12								
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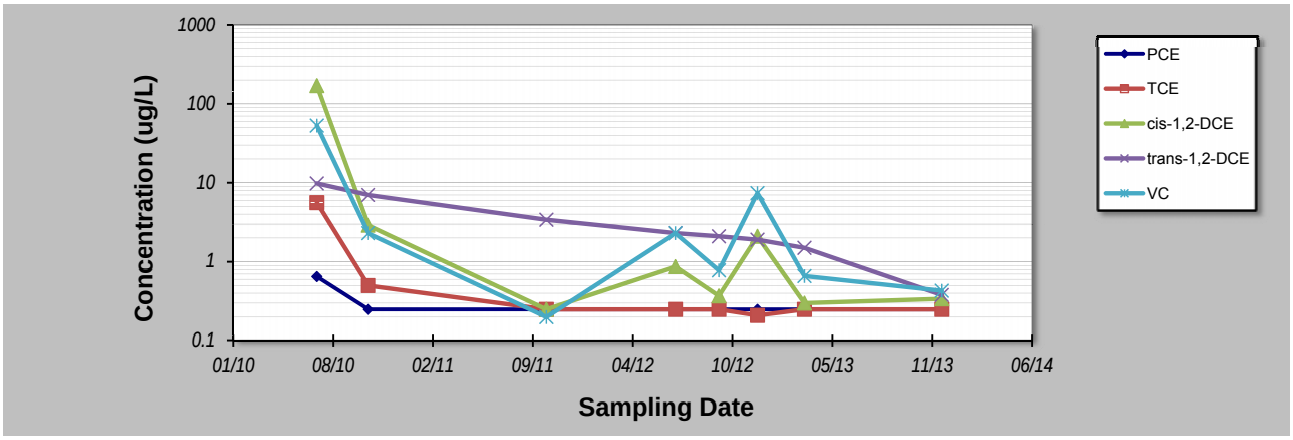
16								
17								
18								
19								
20								
Coefficient of Variation:		0.47	1.99	2.70	0.90	2.17		
Mann-Kendall Statistic (S):		-7	-14	-12	-28	-11		
Confidence Factor:		76.4%	94.6%	91.1%	>99.9%	88.7%		
Concentration Trend:		Stable	Prob. Decreasing	Prob. Decreasing	Decreasing	No Trend		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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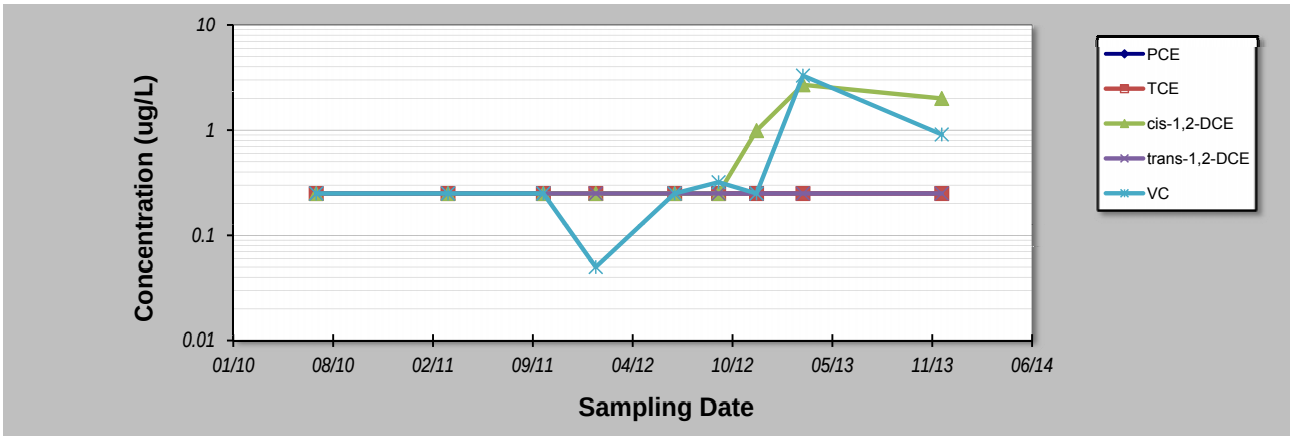
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-37
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:		PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-37 CONCENTRATION (ug/L)						
1	7-Jul-10	0.25	0.25	0.25	0.25	0.25		
2	28-Mar-11	0.25	0.25	0.25	0.25	0.25		
3	5-Oct-11	0.25	0.25	0.25	0.25	0.25		
4	18-Jan-12	0.25	0.25	0.25	0.25	0.05		
5	24-Jun-12	0.25	0.25	0.25	0.25	0.25		
6	20-Sep-12	0.25	0.25	0.25	0.25	0.32		
7	5-Dec-12	0.25	0.25	0.99	0.25	0.25		
8	8-Mar-13	0.25	0.25	2.7	0.25	3.3		
9	11-Dec-13	0.25	0.25	2.0	0.25	0.91		
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.00	0.00	1.16	0.00	1.58		
Mann-Kendall Statistic (S):		0	0	19	0	16		
Confidence Factor:		46.0%	46.0%	97.0%	46.0%	94.0%		
Concentration Trend:		Stable	Stable	Increasing	Stable	Prob. Increasing		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-41
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-41 CONCENTRATION (ug/L)					
1	8-Jul-10	0.25	0.25	2.4	0.25	5.5	
2	18-Oct-10	0.25	0.25	4.6	0.25	9.8	
3	28-Mar-11	0.25	0.25	13	0.25	9.3	
4	5-Jul-11	0.1	0.1	9	0.1	4.3	
5	5-Oct-11	0.25	0.25	13	0.25	7.5	
6	18-Jan-12	0.25	0.25	23	0.25	16	
7	24-Jun-12	0.25	0.25	21	0.25	14	
8	25-Sep-12	0.25	0.25	36	0.25	22	
9	5-Dec-12	0.25	0.25	31	0.25	17	
10	12-Mar-13	0.25	0.25	23	0.23	32	
11	12-Dec-13	0.25	0.25	17	0.39	33	
12							
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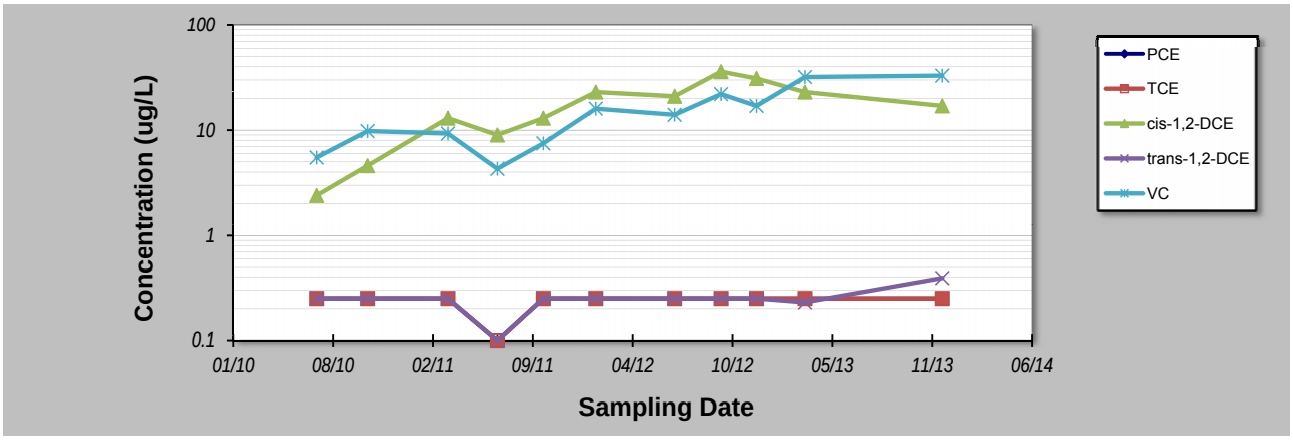
17							
18							
19							
20							
Coefficient of Variation:		0.19	0.19	0.60	0.26	0.64	
Mann-Kendall Statistic (S):		4	4	33	5	39	
Confidence Factor:		59.0%	59.0%	99.5%	61.9%	99.9%	
Concentration Trend:		No Trend	No Trend	Increasing	No Trend	Increasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-42
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-42 CONCENTRATION (ug/L)					
1	19-Oct-10	0.25	0.25	1.7	1.1	0.40	
2	26-Jun-12	0.25	0.25	0.26	1.6	2.2	
3	7-Dec-12	0.25	0.25	0.71	1.4	1.9	
4	11-Dec-13	0.25	0.25	0.24	1.0	0.78	
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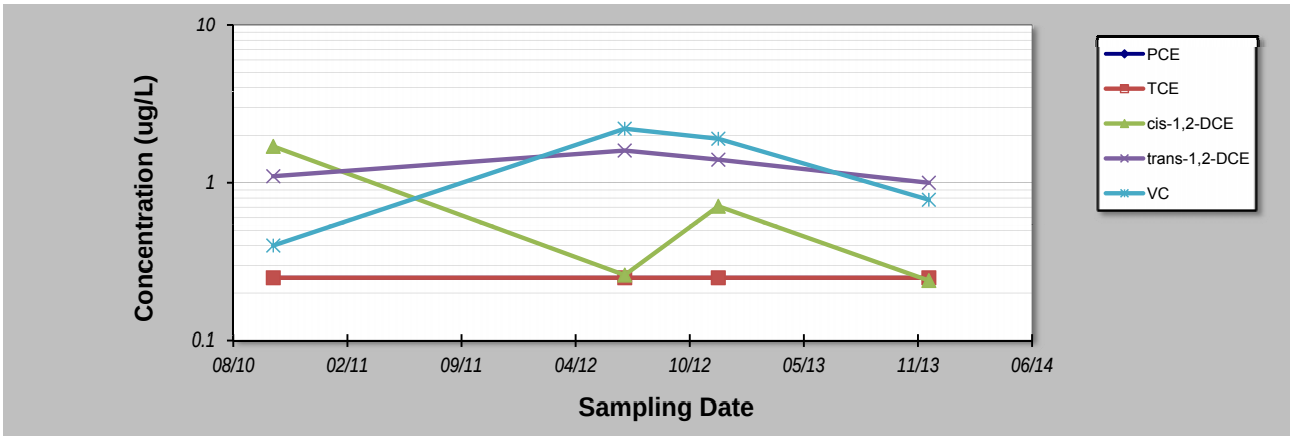
Coefficient of Variation:		0.00	0.00	0.94	0.22	0.66	
Mann-Kendall Statistic (S):		0	0	-4	-2	0	
Confidence Factor:		37.5%	37.5%	83.3%	62.5%	37.5%	
Concentration Trend:		Stable	Stable	Stable	Stable	Stable	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-43
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-43 CONCENTRATION (ug/L)					
1	27-Apr-10	0.25	0.25	14	5.6	16	
2	8-Jul-10	0.25	0.25	5.5	4.3	8.5	
3	19-Oct-10	0.25	0.25	5.1	4	2.2	
4	30-Jun-11	0.1	0.1	0.6	4.4	1.3	
5	11-Oct-11	0.25	0.25	0.25	2.8	0.4	
6	18-Jan-12	0.1	0.1	0.4	3.5	0.6	
7	11-Dec-13	0.25	0.25	0.24	0.27	0.60	
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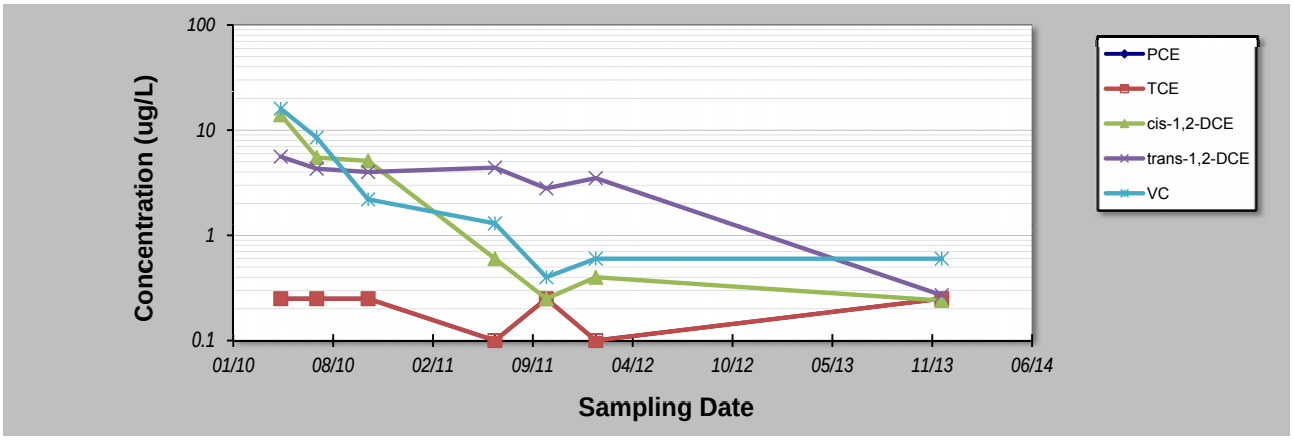
20							
Coefficient of Variation:		0.35	0.35	1.37	0.47	1.40	
Mann-Kendall Statistic (S):		-4	-4	-19	-15	-16	
Confidence Factor:		66.7%	66.7%	99.9%	98.5%	99.0%	
Concentration Trend:		Stable	Stable	Decreasing	Decreasing	Decreasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-47
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-47 CONCENTRATION (ug/L)					
1	26-Jun-12	0.25	0.25	0.64	0.25	0.25	
2	19-Sep-12	0.25	0.25	0.96	0.25	0.68	
3	29-Nov-12	0.25	0.25	170	2.9	88	
4	8-Mar-13	0.25	0.25	560	1.0	460	
5	12-Dec-13	0.25	0.20	24	0.33	33	
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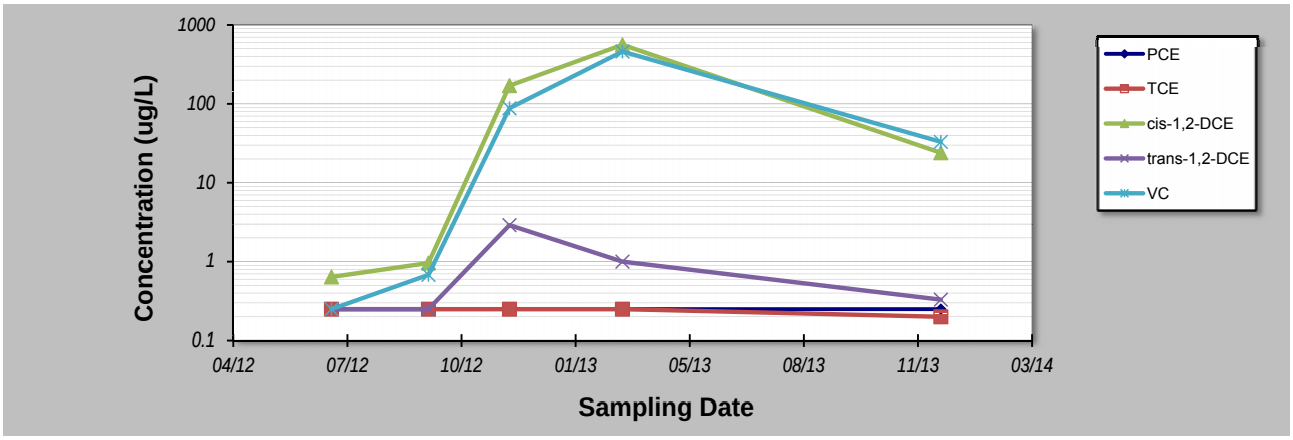
18							
19							
20							
Coefficient of Variation:		0.00	0.09	1.58	1.20	1.68	
Mann-Kendall Statistic (S):		0	-4	6	3	6	
Confidence Factor:		40.8%	75.8%	88.3%	67.5%	88.3%	
Concentration Trend:		Stable	Stable	No Trend	No Trend	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-48
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-48 CONCENTRATION (ug/L)					
1	26-Jun-12	0.24	0.41	4500	4.8	500	
2	26-Sep-12	0.25	0.26	0.97	0.44	18	
3	29-Nov-12	0.25	0.25	36	0.25	66	
4	12-Mar-13	0.58	0.22	31	0.88	28	
5	12-Dec-13	2.3	1.3	1100	7.0	500	
6							
7							
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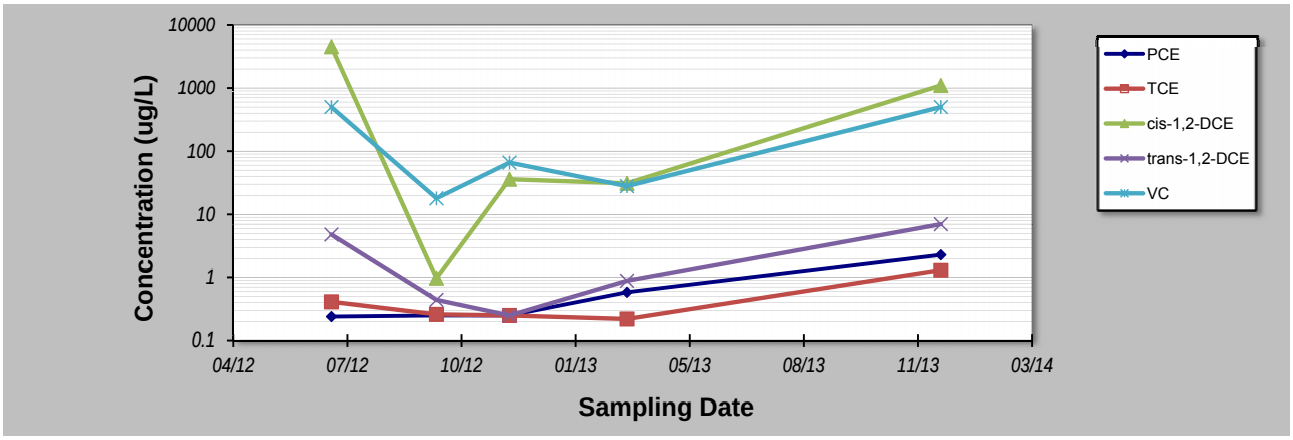
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:	1.23	0.94	1.71	1.14	1.14		
Mann-Kendall Statistic (S):	9	-2	0	2	1		
Confidence Factor:	97.5%	59.2%	40.8%	59.2%	50.0%		
Concentration Trend:	Increasing	Stable	No Trend	No Trend	No Trend		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-49
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-49 CONCENTRATION (ug/L)					
1	25-Jun-12	0.25	0.25	11	0.25	1.5	
2	24-Sep-12	0.25	0.25	19	0.25	2.4	
3	7-Dec-12	0.25	0.25	4.9	0.25	0.91	
4	12-Mar-13	0.25	0.25	4.2	0.25	0.52	
5	12-Dec-13	0.25	0.25	2.8	0.25	0.22	
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11							
12							
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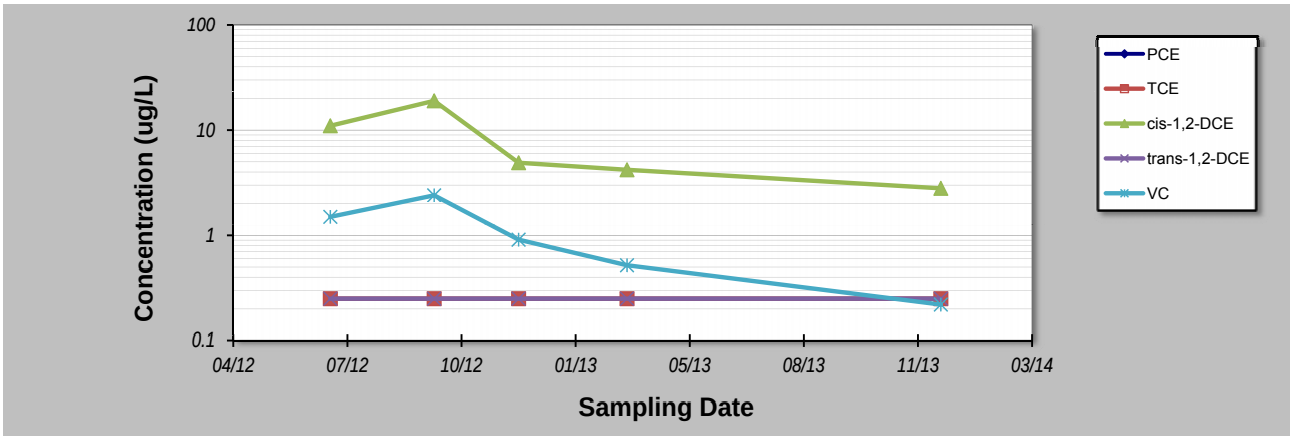
20							
Coefficient of Variation:		0.00	0.00	0.80	0.00	0.78	
Mann-Kendall Statistic (S):		0	0	-8	0	-8	
Confidence Factor:		40.8%	40.8%	95.8%	40.8%	95.8%	
Concentration Trend:		Stable	Stable	Decreasing	Stable	Decreasing	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-50
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-50 CONCENTRATION (ug/L)					
1	26-Jun-12	0.25	2.0	4.6	0.6	3.2	
2	26-Sep-12	0.25	0.42	0.54	0.34	0.35	
3	6-Dec-12	0.25	0.25	0.70	0.25	0.6	
4	8-Mar-13	0.25	0.25	0.41	0.25	0.25	
5	11-Dec-13	0.25	0.25	0.46	0.10	0.27	
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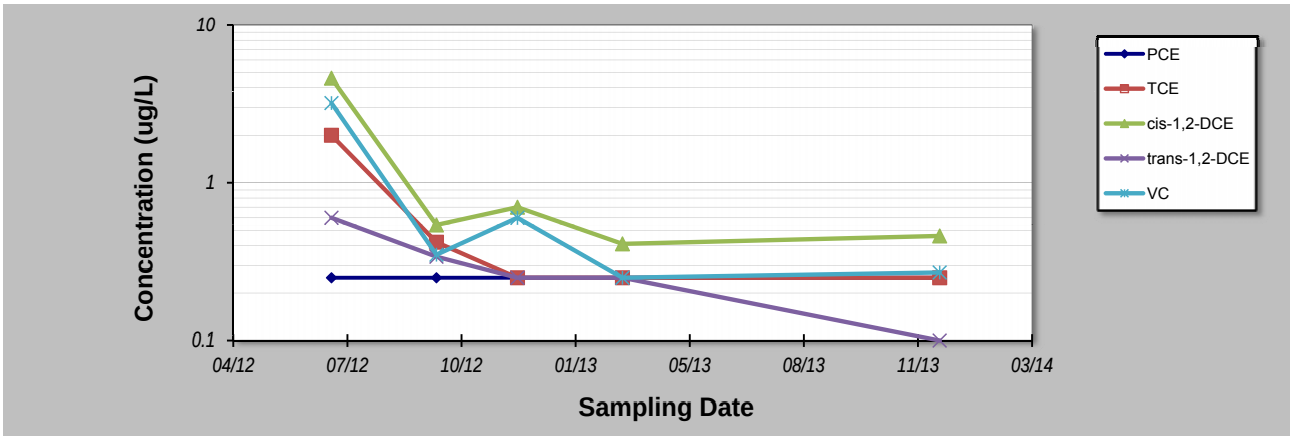
20							
Coefficient of Variation:		0.00	1.21	1.36	0.60	1.36	
Mann-Kendall Statistic (S):		0	-7	-6	-9	-6	
Confidence Factor:		40.8%	92.1%	88.3%	97.5%	88.3%	
Concentration Trend:		Stable	Prob. Decreasing	No Trend	Decreasing	No Trend	



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. For trend analysis purposes, non-detect results (U-flagged data) were entered at half of the reporting limit. Estimated results (J-flagged data) were entered as-is without the flag. Data that have been altered in these ways are underlined. Constituents without sufficient unflagged data were not analyzed.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	1-May-14	Job ID:	
Facility Name:	NSTI Site 24	Constituent:	Well 24-TW-53
Conducted By:	P. Hamner	Concentration Units:	ug/L

Sampling Point ID:	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC		
Sampling Event	Sampling Date	WELL 24-TW-53 CONCENTRATION (ug/L)					
1	26-Jun-12	3.0	12	660	3.4	27	
2	26-Sep-12	3.1	11	520	2.2	41	
3	6-Dec-12	0.25	1.8	46	3.5	49	
4	12-Mar-13	0.25	0.69	1.7	0.25	0.61	
5	12-Dec-13	0.25	0.45	1.2	0.27	4.6	
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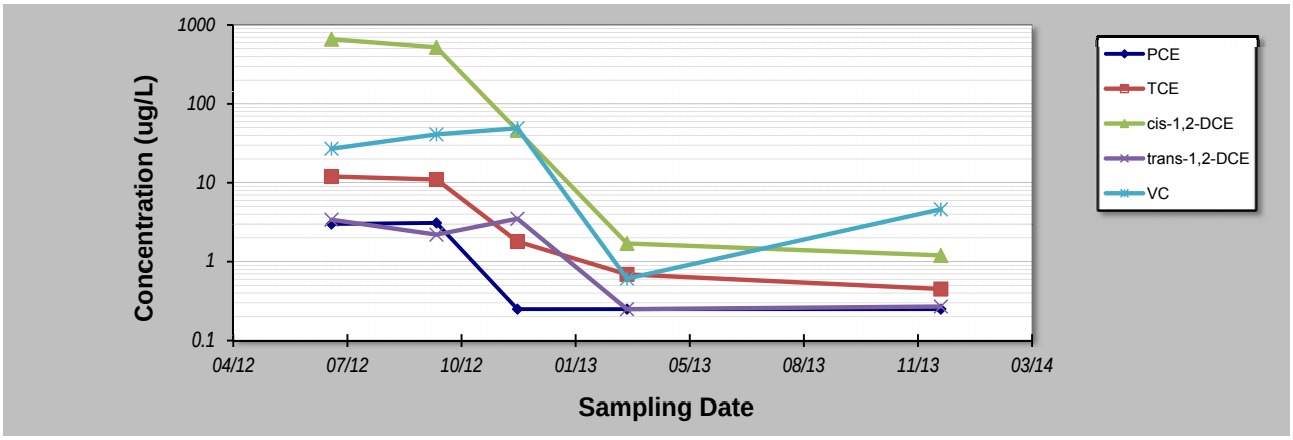
20							
Coefficient of Variation:		1.12	1.12	1.30	0.83	0.88	
Mann-Kendall Statistic (S):		-5	-10	-10	-4	-2	
Confidence Factor:		82.1%	99.2%	99.2%	75.8%	59.2%	
Concentration Trend:		No Trend	Decreasing	Decreasing	Stable	Stable	



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
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Appendix E: Responses to BCT Comments on Draft Report

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Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
1	Section 2.0, Background, page 2-1	Please briefly provide rationale for the groundwater and soil gas sampling schedule, such as why certain sites are sampled quarterly and others semiannually. Please briefly explain how site monitoring wells were selected for inclusion in this groundwater monitoring program. We recognize these explanations were included in the Work Plan, but would appreciate a brief summary in this document.	As requested, a brief rationale for each IR site was added to Section 2.0 as follows (new text in *italics*): Site 6: *"The current quarterly groundwater monitoring program was designed to provide baseline data from new monitoring wells 06-MW25 and 06-MW26. Following completion of the first year of quarterly monitoring, the sampling frequency will be re-evaluated (Trevet 2013)."* Site 12: *"The current semiannual and annual groundwater monitoring program was designed to monitor the fate and transport of COPCs to support the IR Site 12 Remedial Investigation/Feasibility Study. The monitoring program was designed to provide continuing data for wells with reported COPCs above toxicity risk screening values and nearby wells to delineate the extent of groundwater impacts (Trevet 2013)."* Site 21 *"The current semiannual groundwater and soil gas monitoring program was designed to confirm that the human health risk from the vapor intrusion pathway remains in the acceptable range in accordance with the Final ROD. The groundwater monitoring program was designed to provide data from the core of the dissolved chlorinated ethene plume, which are most relevant regarding potential*

No.	Section/Page	Comment	Response
			commercial/industrial exposure. Similarly, the five soil gas probes selected for monitoring were selected as the most relevant to determine if the vapor intrusion pathway risk remains stable and within or below the risk management range for nonresidential users (DON 2013a).” Site 24 *“The current semiannual groundwater monitoring program was designed to monitor the effectiveness of treatability studies and to provide long term monitoring data to support preparation of a ROD and Remedial Design. The groundwater monitoring program provides data from monitoring wells that met at least one of the following optimization criteria (Trevet 2013):* • *COC concentration exceeded the project remediation goal within previous 3 years* • *COC concentration exceeded the alternate project remediation goal within previous 3 years and well is within 100 feet of proposed residential land use* • *COC concentration exhibited increasing or rebounding trend* • *Supplemental data are needed to delineate a dissolved COC plume”*

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
2	*Section 2.2, IR Site 6, page 2-2*	Please indicate the volume of soil excavated in the 2002 and 2003 petroleum remedial activities described in the first paragraph of page 2-2.	The section was revised to provide the requested information. The following sentence was added to the first paragraph on page 2-2: "*Remedial activities included removing a total of approximately 5,700 cubic yards (cu. yd.) of impacted soil and transporting off site for proper disposal (Shaw 2004).*"
3	Section 2.4, IR Site 21, page 2-4	The first sentence of the fourth paragraph on this page describes the historic waste-oil recovery area, which included an oil-water separation facility and above ground storage tanks near Building 3. Please indicate the former locations of the facility and above ground storage tanks on Figure 5.	Figure 5 was revised to show the former locations of the above ground storage tanks and dip tank.
4	Section 4.3, Receptors, page 4-2	This section states that ecological resources are potential receptors at Site 12, please indicate specifically which ecological receptors are potentially at risk of exposure at this site.	The section was revised to indicate the potential receptors at IR Site 12 per the 2007 Final Screening-Level Ecological Risk Assessment for Sites 6, 12, 21, 24, 30, 31, 32, and 33, Treasure Island, California. The following was added to the last sentence of the first paragraph on page 4-2 (added text in *italics*): "Ecological resources are also potential receptors at IR Site 12 *including plants, invertebrates, birds, and mammals (SulTech 2007b).*"

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
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No.	Section/Page	Comment	Response
5	Section 5.0, Groundwater and Soil Gas Monitoring Field Activities, page 5-1	The second sentence of the first paragraph states that field activities during the March, June, and September 2013 sampling events at Sites 6 and 12 were conducted under the approved SAP for Sites 6 and 12. Please clarify that monitoring wells in Site 12 were gauged and sampled in June, September, and December 2013, as indicated in Tables 3 and 8 through 10.	The section was revised to clarify that field activities at Site 12 were only during June 2013.
6	Section 7.0, Groundwater and Soil Gas Monitoring Results and Tables 6 through 18	Some of the analytical data presented in Tables 6 through 18 include data that pre-dates 2013. Please provide a reference for this data both in the tables and in text sections 7.1 through 7.3.	Sections 7.1, 7.2, and 7.3 were revised to state that historical analytical data were compiled from the Naval Installation Restoration Information Solution database.
7	Section 7.1, Groundwater Level Monitoring, page 7-1	Please explain why top of casing elevations were not available for monitoring wells 06-MW25 and 06-MW26 as the well condition summary provided in Table 1 indicates that both wells are in good condition and that no maintenance is required.	Monitoring wells 06-MW25 and 06-MW26 were not surveyed for top-of-casing elevation. The intent of Table 1 is to summarize the physical condition and maintenance needs of each well. Surveying is not included in the table as it is not considered a physical maintenance need. Surveying of well top-of-casing elevations is planned in 2015.
8	Section 7.1, Groundwater Level Monitoring, page 7-1	A Site 12 monitoring well, well 12-MW04, was included in the Site 6 groundwater elevation data in Table 2. Please explain in Section 7.1 why this well was included in the Site 6 groundwater elevation data summary.	The following note was added to Table 2: *"IR Site 12 monitoring well 12-MW04 was added to the groundwater level monitoring program to supplement the only two existing monitoring wells at IR Site 6 per the current SAP (Trevet 2013). A minimum of three wells is required to determine the groundwater flow direction."*

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Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
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No.	Section/Page	Comment	Response
9	Section 7.2, Groundwater Analytical Results, page 7-3	Please identify which analytical data sets were analyzed by the Mann-Kendall (M-K) statistical test. For example, M-K tests were conducted for TPH and VOCs at Site 6. The TPH and VOC M-K results were discussed in subsection 7.2.1.1 and the raw M-K test results were presented in Appendix D. Conversely, it appears that M-K tests were not conducted for natural attenuation parameters in subsection 7.2.1.2, as the M-K results were not discussed in subsection 7.2.1.2 nor presented in Appendix D.	The second paragraph of Section 7.2 was revised as follows (new text in *italics*): "Trend analysis was performed *on selected COPC or COC concentration* data from each well using the Mann-Kendall (M-K) statistical test *to evaluate contaminant concentration trends.* The M-K test is a non-parametric analytical method for the detection of a trend in a time series. This test evaluates whether the dependent variable, in this case contaminant concentration, tends to increase or decrease with the independent value, time. As used in this report, the M-K test measures the qualitative direction and significance of a time-concentration trend. *The chemicals selected for M-K analysis were those that have been identified as COPCs or COCs or have historically exceeded site screening levels. Natural attenuation parameters were not included in the M-K testing.*"
10	Section 7.2.1.1, TPH and VOCs, page 7-4	The last sentence of the second paragraph in the section states that due to statistically few sampling events at the wells in Site 6, the M-K results indicated stable or no trends for TPH and VOCs. Please state the number of sampling events that are typically required to make a statistically significant data set for an M-K analysis.	It would be speculative to state a number of data points needed to identify a trend statistically using Mann-Kendall. The section was revised to add the following clarification: *"Additional data points are necessary to determine a statistical trend to support the visual indication of decreasing petroleum hydrocarbon concentrations."*

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
11	Section 8.1.3, Summary of Monitoring Results for IR Site 21, page 8-3	The fourth bullet point on this page states that it is *likely* that risk modeling of chlorinated solvents would be within the risk management range of 10^{-4} to 10^{-6}. Please provide additional information or references that substantiate this statement.	The third sentence of the fourth paragraph on page 8-3was revised as follows (new text in *italics*, deleted text in strikeout): *"Based on the similarity between the recent and historical soil gas results, the potential human health risk indicated by recent data would likely be similar to the baseline health risk evaluated in 2012 (Shaw 2012).* ~~However, the residential SSSL values referenced in this monitoring report are based on a residential exposure scenario at an ELCR of 10-6. It is likely that risk modeling of the PCE, TCE, and chloroform concentrations observed during the monitoring period would be within the risk-management range of 10-4 to 10-6 ELCR. Thus, the monitoring data suggest that the remedy is performing in accordance with the Final ROD.~~*"*
12	Section 8.2, Recommendations, page 8-4	The second bullet point on this page states that natural attenuation monitoring is not necessary at Site 21. Please explain this statement given that chlorinated solvents, which can potentially affect natural attenuation parameters, have been detected in groundwater at Site 21.	Since conditions conducive to natural attenuation at IR Site 21 are already well documented, the collection of additional data is not warranted. The second and third sentences of the referenced bullet were revised with the following clarifications (new text in *italics*): "Anaerobic conditions in groundwater at IR Sites 6, 12, 21, and 24 have been well documented. Sample collection for natural attenuation parameter monitoring should be eliminated from future monitoring *because the conditions necessary for natural attenuation of contaminants have already been shown to be present*. Additionally, natural attenuation parameter monitoring is not necessary at

No.	Section/Page	Comment	Response
			IR Site 21 since it is not part of the selected remedy (institutional controls) ~~and is not required~~ *as presented* in the Final ROD (DON 2013a).”
13	Section 8.2, Recommendations, page 8-4	Please indicate what actions, if any, are recommended to address the following: • Site 6 – Ethylbenzene exceedance in groundwater and missing TOC elevations for both monitoring wells; • Site 12 – Barium, cobalt, and nickel exceedances in groundwater at SWDA Westside and barium and arsenic exceedances in groundwater in the Building 1311/1313 Petroleum Areas; • Site 21 – Vinyl chloride in groundwater exceedance and chloroform, TCE and PCE soil gas exceedances; and • Site 24 – TCE, DCE, and vinyl chloride exceedances in groundwater.	The groundwater monitoring program for IR Sites 6, 12, 21 and 24 was designed to collect and report groundwater monitoring data in support of ongoing environmental restoration efforts. Please refer to the following documents for the current plans for each of the referenced sites: <u>Site 6</u> Department of the Navy. 2014. *Draft Record of Decision/Remedial Action Plan for Installation Restoration Site 6, Naval Station Treasure Island, San Francisco, California*. July 23. <u>Site 12</u> KCH. 2014. *Final Feasibility Study for Installation Restoration Site 12, Old Bunker Area, Non-Solid Waste Disposal Area, Former Naval Station Treasure Island, San Francisco, California.* March. <u>Site 21</u> TriEco-Tt. 2014. *Draft Remedial Action Completion Report, Installation Restoration Site 21, Former Naval Station Treasure Island, San Francisco, California.* September. <u>Site 24</u> TriEco-Tt. 2014. *Final Focused Feasibility Study*

No.	Section/Page	Comment	Response
			Addendum, Installation Restoration Site 24, Former Dry Cleaning Facility, Naval Station Treasure Island, San Francisco, California. October 3. No changes to the text of the Report are included as part of this response.
14	Section 4.1, Contaminant Sources and Release Mechanisms, page 4-1	Please correct "Mariner Court" to "Mariner Drive" in the third bullet point of this section.	All references to Mariner Court will be revised as suggested.
15	Section 4.5, Current and Future Land Use, page 4-2	The last paragraph on this page states that the planned land use for TI is illustrated on Figure 6. In addition to the planned land use for TI, Figure 6 depicts the groundwater monitoring locations for Site 24. Please consider illustrating the planned future land use of the entire island (including Sites 6, 12 and 21) on a separate figure in this report.	A figure illustrating planned land use was added as Figure 7 and the reference in this section was revised accordingly.
16	Section 7.1, Groundwater Level Monitoring, page 7-1	Please remove the period between the words "at" and "IR" in the first sentence of the last paragraph on page 7-1.	This particular typo was not located but the entire document was checked for any out of place punctuation and revised as necessary.

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Langan Treadwell Rollo on behalf of the Treasure Island Development Authority (TIDA)
Date of Comments: September 9, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
17	Figures 5, 6, 8, 9 and 12-18	The Site 21 and Site 24 figures show numerous monitoring wells and soil gas probes that were not included in this groundwater and soil gas monitoring program. For readability purposes, please consider removing the not included wells and probes from these figures.	Including all site monitoring wells, even those not currently included in the monitoring program, is useful for referencing past monitoring data and for future site planning. Inactive wells are clearly differentiated from wells in the current monitoring program; therefore, the figures will not be changed.

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Remedios V. Sunga, DTSC PM
Date of Comments: September 12, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
1	Section 1.2-Scope of Work, Pages 1-1 and 1-2	Please include a summary table of the groundwater and soil gas monitoring program as presented in the bullets. The table should identify the wells included in the monitoring program, the frequency of monitoring and the analytes. This summary table should be included in subsequent groundwater monitoring reports with recommended revisions as concurred by the BCT.	A table (Table 1) outlining the monitoring program was added as requested.
2	Section 2.2-IR Site 6, Pages 2-1 and 2-2	The last sentence of this section states "Other chemicals of potential concern (COPCs) in groundwater that are associated with the Site, such as arsenic, will be addressed in the CERLCA Remedial Action." Please clarify that future monitoring wells at Site 6 will be addressed in the Remedial Design, and continued monitoring of these future wells will eventually be included in this base wide monitoring program.	This basewide groundwater monitoring program is designed to support the remedial design and subsequent remedial action. Once the site-specific remedial design is final, the monitoring program may be modified to adjust for changed site conditions. Any additional monitoring wells and subsequent monitoring requirements will be outlined under the site–specific remedial design/remedial action. Subsequent monitoring, as needed, will be completed by the basewide monitoring program or a site-specific program implemented after the remedial action. Please refer to the following document concerning the Remedial Design: Department of the Navy. 2014. *Draft Record of Decision/Remedial Action Plan for Installation Restoration Site 6, Naval Station Treasure Island, San Francisco, California*. July 23.
3	Section 2.4-IR Site 21, Pages 2-4 and 2-5	This section states "Results indicated that the potential human health risk from VOCs in soil gas at the Site is within the risk management	The Final ROD restricts the use of a portion of the site from residential use, requires a notice to future occupants of a portion of Building 3; and contains the

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		range for non-residential receptors." Please clarify that the Site 21 ROD/Final RAP has restrictions on enclosed structures on a portion of the Site for use by any occupants (residential or non-residential) based on the soil gas data.	following language restricting use of enclosed structures: "The deed for transfer of the property will require the property owner to provide a notification to future users of the southeast corner of Building 3, within the Site 21 boundary (Figure 3), where the risk estimates calculated in the HHRA Addendum slightly exceed regulatory criteria for commercial/industrial occupants if this area, which is not currently enclosed, is fully enclosed at some point in the future. The notification shall describe the screening-level health risk estimates associated with the COCs remaining at the site. The deed notice will also require the property owner to notify the appropriate State regulatory agency of improvements in this area that result in the area being fully enclosed. The notification requirement shall be removed when it is demonstrated that the residual soil gas concentrations are below the SSSLs for commercial/industrial use."
4	Section 4.1-Contaminant Sources and Release Mechanisms, Page 4-1	IR Site 6: Other release mechanisms at Site 6 include the fire training exercises that consisted of fire extinguishing chemicals and burn areas which are the sources of non-petroleum COCs.	The following new text was added after the second sentence of the IR Site 6 bullet for Section 4.1: *"Sources of non-petroleum COPCs at IR Site 6 included firefighting training activities, fuel products burning, firefighting wastewater, transformers, and surface spills (ERRG 2012)."*
5	Section 4.2-Affected Media, Page 4-	This section states "At sites which involve volatile constituents (solvents or petroleum hydrocarbons), soil gas is a likely affected	The following was added after the second sentence of Section 4.2: "*Soil gas is a confirmed affected medium at IR Site*

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	1	medium." Please revise this statement since soil gas is a confirmed affected medium at Site 21.	*21."*
6	Section 4.5-Current and Future Land Uses, Page 4-2	This section states "the planned land use is briefly described below and illustrated on Figure 6." Land use is not shown in Figure 6 or in any of the figures. Please delete the reference or include a new figure.	A figure illustrating planned land use was added as Figure 7 and the reference in this section was revised accordingly.
7	Section 5.6.2-Soil Gas Sample Laboratory Analysis, Pages 5-5 and 5-6	Please discuss the purpose of analyzing hydrogen sulfide in the soil gas samples.	Per the current SAP, hydrogen sulfide is included in the soil gas sampling program to evaluate natural attenuation processes. This is stated in section 7.3.1. Hydrogen sulfide can be generated under reducing conditions, which are conducive to reductive dechlorination of VOCs.
8	Section 7.1-Groundwater Level Monitoring, IR Site 6, Page 7-1	Please discuss why TOC elevations were not available for Site 6. Since additional wells may be installed at Site 6 per the upcoming Remedial Design, the TOC elevation of the existing wells and new wells should be taken at that time.	The following was added to the end of the first paragraph of Section 7.1: *"The IR Site 6 wells will be surveyed for TOC elevations in 2015."*
9	Section 7.1-Groundwater Level Monitoring, IR Site 21, Page 7-2	This section states that the groundwater elevation was inconsistent with historical flow due to the limited number of wells that were gauged. Additional wells should be monitored at Site 21 for more accurate information on groundwater flow and gradient of the remaining groundwater concentrations due to the site's proximity to the San Francisco Bay. As previously commented, the location and number of wells that are	The purpose of groundwater and soil gas monitoring per the Final ROD for IR Site 21 is as follows: "Soil gas and groundwater monitoring will be conducted to confirm that the human health risk from the vapor intrusion pathway remains in the acceptable range." The number of wells monitored at Site 21 is sufficient to confirm that the human health risk from the vapor intrusion pathway remains in the acceptable range, because they are biased at the groundwater and

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		included in the groundwater monitoring program are insufficient to monitor migration of residual contamination in groundwater since only wells within the core of the plume are monitored. Closure of Site 21 require a more extensive groundwater sampling to confirm any rebounds and complete degradation of the COCs, and to verify achievement of the residential remedial goals and termination of the land use controls.	soil gas locations that had the highest concentrations at the site. The groundwater flow direction and contaminant concentrations at IR Site 21 have been well documented during previous site monitoring and do not need to be evaluated further. More accurate information on groundwater flow and gradient of the remaining groundwater concentrations is not required in the ROD. Preventing or characterizing the migration of COCs to the San Francisco Bay is not a Remedial Action Objective identified in the Site 21 ROD because the Screening-level Ecological Risk Assessment did not identify any Chemicals of Ecological Concern at Site 21. Please see the Final ROD or the Site 21 Remedial Investigation for more detailed information regarding the transport of contaminants to the Bay. It should also be noted, that the treatability study was completed in 2010, and since that time, groundwater monitoring was conducted across the plume, at up to 47 wells, for more than three years. Other than well IP-07, which had an unexplained spike in cis-1,2-DCE and VC concentrations in 2012 that has since declined, all other groundwater monitoring wells have been below the Site 21 Remedial Goals since before 2011. This extensive monitoring that the Navy has already completed has confirmed that rebound is not

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			an issue at Site 21. For more comprehensive historical plume data at Site 21, please see Table 3 of the Final 2012-2013 Annual Groundwater Monitoring Report for Installation Restoration Sites 21 and 24 (Trevet 2014).
10	Section 7.2.2.-Site Site 12 – SWDA Westside Results	Please clarify that only arsenic and copper results were presented in Figure 11.	Historically, arsenic and copper have been the metal COPCs that have presented the most concern from a human health and ecological risk standpoint. Therefore, this figure is limited to showing concentrations of these analytes, consistent with previous groundwater monitoring reports.
11	Section 7.2.3-IR Site 12 – Building 1311/1313 Petroleum Area Results	Please include the TPH results in Figure 11 or in another figure since there are more TPH results that exceeded the screening criterion.	TPH results did not exceed the toxicity screening criterion during the 2013 monitoring period. The highest TPH value, TPHd of 720 µg/L in well 12-MW05 on June 25, 2013, was less than the 1,400 µg/L toxicity screening criterion. However, TTPH was added to the figure as requested since TPH is likely contributing to the presence of dissolved arsenic in groundwater.
12	Section 7.2.3.1-TPH, Page 7-6	Please revise the statements in this section about maximum concentrations detected. The maximum detection of TPHd was 1800 µg/L at MW-22 (not 720 µg/L at MW-05) which is above the 1400 µg/L screening criterion. The TTPH detections should be discussed in this section since the highest result was TTPH at 1960 µg/L, and there are more TTPH results that exceeded the screening criterion.	As shown in Table 9, TPH results from monitoring wells at IR Site 12 have not indicated an exceedance of the toxicity screening criteria since 2011. This section and similar ones were revised to indicate that the statements regarding screening criteria exceedances were limited to the 2013 monitoring period.

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Comments by: Remedios V. Sunga, DTSC PM
Date of Comments: September 12, 2014
Date of Response to Comments: November 13, 2014

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13	Section 8.1.2-Summary of Monitoring Results for IR Site 12, Page 8-2. Fourth Bullet	Please revise the statement that TPHd concentrations were less than the screening criterion. TPHd and TTPH were reported above the screening criterion of 1400 µ/L.	As stated in the sentence immediately following the Section 8.1.2 heading, the summary refers only to the 2013 monitoring event at IR Site 12. Also refer to the response to comment 12.
14	Sections 8.2-Recommendations, Page 8-5. First Bullet	Prior to well abandonments, a work plan for removal of any wells should be submitted for BCT review since limited wells are included in the groundwater monitoring program at Sites 21 and 24. Monitoring of additional wells at Site 21 and 24 will be needed for site closure.	The section was revised to include the following recommendation: *"Monitoring wells deemed unnecessary for monitoring purposes will be recommended for destruction. The BCT will be given the opportunity to review and comment on the recommendations."*
15	Sections 8.2-Recommendations, Page 8-5. Second Bullet/Site 21	In addition to increases in chloroform in soil gas, elevated concentrations of PCE and TCE that exceeded the residential site-specific screening levels also warrants continued soil gas monitoring. Please discuss the frequency of soil gas monitoring at Site 21.	The section was revised as follows: "Soil gas monitoring at IR Site 21 between 2010 and 2013 has indicated stable concentrations for most VOCs. *While not identified as a COC, chloroform concentrations from soil gas probes located inside Building 3 (21-SG-27, 21-SG-30, and 21-SG-31) increased to above the SSSL during the 2013 monitoring period. One additional year (two semiannual soil gas monitoring events) is recommended to provide additional data to evaluate COC concentration trends."* Please note that chloroform has not been identified as a COC at IR Site 21.

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16	Sections 8.2-Recommendations, Pages 8-4 and 8-5	Soil gas monitoring at Site 24 should also be recommended and included in the monitoring program since limited locations were sampled with only one sampling event. Soil gas samples should be collected from additional locations at Site 24 that should be presented in a work plan for BCT review.	The Navy has recommended additional soil gas sampling at IR Site 24. Please refer to the following document: TriEco-Tt. 2014. *Final Focused Feasibility Study Addendum, Installation Restoration Site 24, Former Dry Cleaning Facility, Naval Station Treasure Island, San Francisco, California.* October 3. A soil gas survey sampling plan for Site 24 will be prepared and submitted to the BCT for review in early 2015.

Response to Comments on the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California
Comments by: Myriam Zech, RWQCB PM
Date of Comments: October 20, 2014
Date of Response to Comments: November 13, 2014

No.	Section/Page	Comment	Response
1	General comment	Occasionally the report fails to document the levels of a contaminant which may point to additional, needed remediation, or demonstrate that remediation has been sufficient. For example, Arsenic at Site 6 is not monitored, but monitoring of metals and SVOCs is planned after completion of the Remedial Design (RD), which is expected no sooner than September 2016. Are you planning to monitor for Arsenic prior to full completion of the RD? While the remedial design will change the expected results, it would make sense to monitor such contaminants now, at least at 06-MW26 to get a sense of what is going on there now.	No additional monitoring is recommended at this time. However, additional monitoring wells and analysis will likely be recommended in the forthcoming remedial design and remedial action work plan. For additional information regarding the present and future requirements for monitoring, please refer to the *Draft Record of Decision/Remedial Action Plan for Installation Restoration Site 6, Naval Station Treasure Island, San Francisco, California*. July 23.
1	p. viii (Acronyms and Abbreviations)	Add TOC, "top of casing" to the list of acronyms.	TOC is included in the list of acronyms.
2	p. 2-4 (2.3.2 Mariner Court and Building 1311/1313 Petroleum Areas, first paragraph)	Please mention that the Gateview Arsenic/TPH area will be the object of a TCRA.	The following sentence was added to the end of the first paragraph of Section 2.3.2: *"A Time-Critical Removal Action is planned for the Gateview Arsenic/TPH area."*
3	p. 2-5 (2.4 IR Site 21, Second paragraph)	Please indicate that the potential human health risk from chlorinated volatile organic compounds (VOCs) in soil gas at the Site is outside the risk management range for residential receptors.	The last sentence of the third paragraph on page 2-5 was revised as follows (new text in *italics*): "Results indicated that the potential human health risk from chlorinated volatile organic compounds (VOCs)

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		Please also indicate what the human health risk is as well as the risk management ranges for residential receptors and non-residential receptors.	in soil gas at the Site is within the risk management range *(incremental cancer risk ranging from 10^{-4} to 10^{-6})* for nonresidential receptors *but is greater than 10^{-4} for residential receptors, which is outside the risk management range*."
4	p. 4-1 (4.1 Contaminant Sources and Release Mechanisms, IR Site 6)	Please add that the releases also resulted from firefighting activities.	The following sentence was added after the second sentence of the IR Site 6 bullet for Section 4.1: *"Sources of non-petroleum COPCs at IR Site 6 included firefighting training activities, fuel products burning, firefighting wastewater, transformers, and surface spills (ERRG 2012)."*
5	p. 7-1 (7.1 Groundwater Level Monitoring, first paragraph):	Please explain why TOC elevations were not available. Were the 2 wells not surveyed? If not, when will they be?	The following sentence was added to the end of the first paragraph of Section 7.1: *"The IR Site 6 wells will be surveyed for TOC elevations in 2015."*
6	p. 7-6 (Natural Attenuation/Geochemistry Parameters, last paragraph)	Please replace "The reducing/anaerobic conditions likely influence dissolved arsenic concentrations in the Building 1311/1313 area" with "Arsenic concentrations exceeding groundwater screening levels are found at the same locations where petroleum releases occurred. Elevated arsenic concentrations in petroleum-contaminated areas represent naturally occurring arsenic that was previously sorbed to hydrous ferric oxide mineral surfaces but was released because of reducing conditions caused by the presence of petroleum hydrocarbons."	The requested revisions are not supported based on the geochemical parameter results presented in this section and could be construed as speculation in this context. However, similar language was added to the metals discussion in Section 7.2.3.2 as follows: *"The time-concentration plots included in Appendix D also indicated a generally positive correlation between arsenic and TPH concentration. For example, wells with higher reported TPH concentrations (e.g., 12-MW05 and 12-MW23) generally exhibited higher arsenic concentrations."*

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7	Figure 11	It would help to show TPH results even though they are below the toxicity criteria, so as to view these results together with the results for Arsenic. Please correct inconsistencies in the monitoring frequency -- the legend shows 12-MW21, 12-MW 24 and 12-MW34 as sampled annually, but they were not sampled in 2013.	TPH results and a monitoring schedule note were added to Figure 11 as requested. Additionally, the following sentence was added to the end of the first paragraph of Section 5.3: *"To synchronize the monitoring schedules, the second event at IR Site 12, normally performed in December 2013, was completed in March 2014 which is concurrent with monitoring at IR Sites 6, 21, and 24."*
8	Table 8	Please correct the header labeled "TPHp".	TPHp was revised to TPHg to maintain consistency with the report text.

Additional Navy Revisions *to the Draft 2013 Annual Groundwater and Soil Gas Monitoring Report for Installation Restoration Sites 6, 12, 21, and 24, Former Naval Station Treasure Island, San Francisco, California*

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1	Pg. 7-5	Building 1311 and 1313 addresses have been changed	Building 1311 is now 175 Gateview Avenue and Building 1313 is now 221 Gateview Avenue. All references, throughout the document, to Buildings 1311 and 1313 have been revised accordingly.